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ORIGINAL ARTICLES.

TYPHOID FEVER AS A COMPLICATION AND A SEQUEL OF INFLUENZA.¹

By J. M. ANDERS, M.D., PH.D.,
OF PHILADELPHIA;

PROFESSOR OF MEDICINE AND CLINICAL MEDICINE AT THE MEDICO-CHIRURGICAL COLLEGE; PHYSICIAN TO THE PHILADELPHIA AND MEDICO-CHIRURGICAL HOSPITALS, PHILADELPHIA.

DURING the recent epidemics of influenza, the first of which occurred in the latter part of 1889, I observed cases of influenza that apparently developed into pure typhoid fever. Two instances of this sort I reported elsewhere.² In my former paper a brief allusion to some statistics, which showed that out of 338 cases of influenza 6 were complicated with typhoid fever, was made. In one of these typhoid developed after an interval of normal temperature lasting twenty days. Three additional cases, two of which occurred in the practice of Dr. J. N. Snively, are reported below.

Reference is not had here to the rather numerous instances of influenza with marked intestinal symptoms that more or less strongly resemble typhoid fever. Da Costa has recently reported a case of the latter sort.³ These can, as a rule, be easily separated from typical forms of typhoid fever. Thus, in Da Costa's case, the appearance of the tongue (dry, and red at the tip), the swollen belly, and the marked general debility in the absence of localized inflammatory lesions, pointed to typhoid, but the presence of a markedly irregular temperature record, on the one hand, and the absence of either enlargement of the spleen or the typhoid eruption, on the other hand, showed the case to be one of influenza of adynamic type.

The chief object of the present paper is to confirm the statement made elsewhere that typhoid fever may appear as a late complication of influenza, or may follow this disease.

Among other affections which are known to be associated with la grippe, as complications in varying degrees of frequency, are: pneumonia, both croupous and catarrhal (with which latter

disease pleurisy is always, and purulent pericarditis rarely, combined); gastro-enteritis, cerebro-spinal meningitis, etc. Again, its most common sequelæ are phthisis, peripheral neuritis, perineuritis, melancholia, mania and neuralgia.

Cases of influenza which are complicated with typhoid fever are confessedly difficult of correct diagnosis without careful bacteriological studies. I do not doubt that their dual nature has often escaped recognition. At all events, they have not been added to the literature of the subject previous to the appearance of my own article, so far as I know.

No bacteriological observations were undertaken, either in connection with the cases reported previously or those herein narrated; hence, the evidence to show the clinical association of these two diseases has been gained only by observation of the symptoms at the bedside.

CASE I.—E. S., male, aged 22, a student, was taken ill Feb. 20, 1895. The onset was sudden. There were repeated slight chills, followed immediately by fever; intense headache; pains in the muscles generally, and great languor. The following day I was called to his boarding-house, where he had betaken himself to bed. The following condition was presented:

Great prostration; intense headache, the pain being situated especially deep in the orbits and in the region of the occiput. Temperature was 102° F.; pulse, 100 per minute; great pain in muscles of limbs, loins, and the intercostal spaces. The following day, as a result of the action of a purgative, he experienced severe gastro-intestinal pains with marked diarrhea. The latter symptoms were soon controlled by the use of paregoric and intestinal antiseptics. There was now some sore throat, tickling of the pharynx and considerable dyspnea, but not much cough; nor were there any abnormal physical signs referable to the chest. His spleen was at this time not enlarged. The diagnosis of influenza was readily made.

The course of the case for the next five or six days also fully corroborated this view. During the latter period the intense headache persisted. There was the usual restlessness, together with utter muscular prostration, and the burning and boring muscular pains, which changed their seat in the manner so frequently observed in la grippe. The fever continued and was of irregular type, and the pulse was increased in frequency proportionately with the fever. At the end of the latter period, or about the time that

¹ Read before the Philadelphia County Medical Society, Feb. 26, 1896.

² "A Statistical Study of Influenza," *Philadelphia Hospital Report*, Vol. III.

³ "Cases of Influenza Simulating Typhoid Fever and Cerebro-Spinal Meningitis," *University Medical Magazine*, Philadelphia, Feb., 1894.

defervescence in the temperature was expected, the evening temperature continued at 103° F., and the morning ranged from 101° to 102° F. The spleen now was slightly enlarged, the abdomen slightly tender, especially in the ileo-cecal region; and there was slight diarrhea, amounting to two or three soft, ochre-colored stools daily. No new nervous symptoms had appeared, but the very severe headache showed little tendency to abate. The catarrhal symptoms, referable to the nose and throat, however, had completely subsided.

March 3d.—Typhoid fever was now suspected. On March 4th (the twelfth day of the illness) the temperature was still pursuing the same continued type. The spleen was found, on palpation, to be considerably enlarged, and there appeared two characteristic typhoid spots on the upper part of the abdomen. The rose-spots faded away in the usual length of time, and subsequently a fresh and more abundant crop put in an appearance. The case was now treated as one of typhoid fever, to wit: by allowing a liquid, nourishing diet, by the use of cool baths, and internally quinine and salol in combination.

Apart from the fever, no other symptom demanded therapeutic measures save the headache and neuro-muscular pains, the latter affecting especially the loins and lower intercostal spaces. While the physical signs were negative, the patient was unable to take a deep inhalation at any time during the attack without experiencing pleurodynic stitches. These pains subsided with the decline of the temperature, and the subsidence of the typhoid symptoms—events which began at the end of the fourth week of the illness. Defervescence by lysis, so characteristic of typhoid, followed.

For the notes of the two instances following I am greatly indebted to Dr. I. Newton Snively, in whose practice the cases occurred.

CASE II.—“I was called, Feb. 28th, 4 P.M., to see Mr. A. W., aged 42 years, who reported to me that while at work (as brass-finisher), one hour before my visit, he was suddenly seized with a chill of moderate severity, soon after which he began sneezing and coughing. He developed speedily severe headache, pains in the muscles of the limbs and trunk, and soreness all over the body. At the time of my visit his temperature was 103° F.; pulse, 100; respiration, 24. He had, thus early, a naso-pharyngeal and bronchial catarrh. The heart was acting strongly and regularly. The patient gave a history of having felt well up to within an hour of the chill. During the three succeeding days he was much depressed in spirits; he was restless and wakeful at night; also, complained of nausea and loss of appetite. The bowels were regular.

“Under the usual influenza treatment he rapidly improved, temperature fell to normal on the fourth day, while the cough and myalgic pains

were now, also, completely relieved. Appetite was restored, and the patient apparently in a comfortable condition, so that I discharged myself, with the instructions to the family and patient to send for me in case convalescence was in any way interrupted.

“March 7th, two days after I had dismissed myself from the case, I was sent for in the afternoon to see the patient again. I now found him with a temperature of 100° F.; pulse, 90; respiration, 22; and complaining of pain and tenderness in the abdomen, bleeding from the nose, and occipital headache. On physical examination I found the spleen slightly enlarged, the abdomen tympanic, the tongue heavily coated, the mouth dry, the pupils dilated, and the patient quite restless, but there was no delirium. The nurse reported six loose movements of the bowels during the previous 24 hours.

“From this time on the patient advanced rapidly into characteristic typhoid fever. The temperature curve became very characteristic, the epistaxis grew worse and became so unmanageable that I plugged the anterior and posterior nares on March 9th. The typhoid eruption appeared extensively on the latter date; the diarrhea persisted; the heart became weaker in action and the sounds more feeble; the respirations hurried, and there was a slight cough, with a few bronchial râles on auscultation. His expression grew very dull and heavy, and the cheeks were flushed. The tongue became very tremulous; it was very dry and brown, and sordes collected on the teeth. Headache became very severe; there appeared moderate deafness, stupor, muttering delirium, picking at the bedclothing and imaginary objects.

“Dr. J. M. Anders saw the patient with me on March 9th and confirmed the diagnosis of typhoid fever. He also thought the case had been one, primarily, of influenza, followed by typhoid. I saw the patient on the morning of March 10th, when the nurse gave a rather favorable report, as the patient had slept more than any previous night for a week; his pulse was dicrotic but regular, and marked 112; temperature, 102.5° F.; patient taking milk and whisky regularly and in proper quantities; nose-bleed controlled by plugs; mouth kept moist by placing a large flat sponge (moistened frequently) over it. One hour after my visit I was again summoned to the case, and, upon entering the room, found the patient dead. The nurse, who was an experienced graduate, reported that the patient had suddenly stiffened himself in bed, and when she took his pulse she found it had gone up to 160, was irregular and very weak; that the patient seemed to be in a faint. She administered carbonate of ammonium and gave a hypodermic of strychnine and digitalis, but with no effect, as the patient died a few minutes later. One hour after death large quantities of blood passed from the bowels, thus showing that the patient had died of an internal

hemorrhage. He had shown the hemorrhagic diathesis from the first inception of the typhoid fever. No autopsy was made."

CASE III.—"Mr. J. L., aged 20 years, Canadian by birth, sent for me Feb. 23, 1895. He complained of severe pain in the substernal region, and sharp myalgic pains about the chest. He had a severe cough, paroxysmal and painful in character; he also had acute coryza; he expectorated a scanty, tenacious mucus; his temperature was 102° F.; pulse, 96; respiration, 23. On physical examination, I found a few irregularly distributed subcrepitant râles. The respiratory murmur was feeble. The tongue was coated; appetite poor; bowels were regular, and the abdomen normal. He had severe headache, and was very restless at night, but not delirious. Was very weak and perspired profusely. He told me he had been working regularly every day, and felt well until this attack came on. He was employed as a stone-carver, and, at the time he was taken sick, was working on the outside at the Bourse building. I saw him every day for four days, when his catarrhal symptoms, fever, and cough subsided. He now sat up out of bed and felt comparatively well, except that he was very weak and languid.

"March 3d I was again summoned to the patient with the report that he was suffering with severe abdominal pains, diarrhea, and vomiting. This was five days after I had made my last visit to him for the influenza.

"I found him with a heavily coated tongue; complete anorexia; distended and tender abdomen; temperature, 101° F.; pulse, 90; respiration, 20. I ordered a salol and bismuth mixture, and put him on a liquid diet. From this time on he passed through a characteristic attack of typhoid fever; temperature higher each day than the preceding, at first, and always higher in the evening than in the morning. The small, slightly elevated, rose-colored spots appeared on the abdomen on the 10th of March, and the spleen was manifestly enlarged. He had the characteristic nervous symptoms—headache, stupor, twitching of tendons, etc. The urine was small in quantity and very slightly albuminous. Convalescence set in after an illness of twenty-eight days, and was marked by falling out of the hair, anemia, etc."

In my present and previous articles are contained the notes of five cases in which typhoid fever was either a complication or a sequel of influenza. It cannot, in view of the statistics before quoted, be claimed with justice that typhoid fever is a frequent complication or sequel of la grippe. That the epidemic prevalence of influenza is attended with an increased number of cases of typhoid fever, however, is also shown by tracings, which appear in my first article.¹ I am of opinion

that further observation of influenza, with special reference to its association with typhoid fever, will confirm the dictum that the occurrence of the former disease renders the body more than ordinarily receptive to the typhoid bacillus.

1603 WALNUT STREET.

DISEASES OF THE ACCESSORY NASAL SINUSES, WITH SUGGESTIONS REGARDING THEIR TREATMENT.¹

BY ROBERT CUNNINGHAM MYLES, M.D.,

OF NEW YORK:

PROFESSOR OF OTOLARYNGOLOGY AND ADJUNCT-PROFESSOR OF RHINOLOGY AND LARYNGOLOGY AT THE NEW YORK POLYCLINIC; SURGEON TO THE NOSE AND THROAT DEPARTMENT OF THE CHURCH HOSPITAL AND DISPENSARY; ASSISTANT SURGEON TO THE NOSE AND THROAT DEPARTMENT OF THE NEW AMSTERDAM EYE AND EAR HOSPITAL.

SECOND PAPER.

THIS paper may be considered a continuation of the one I read before this section in January, 1893,² and contains a further record of my experience with diseases of the accessory nasal sinuses. I am aware that the subject has been worn almost threadbare and that many assertions and opinions have been advanced regarding it; but it is my hope, by furnishing details of my work, and the rational deductions therefrom, to assist in placing some of these assertions upon a scientific basis. First, a correct diagnosis; and, second, the best treatment to be employed, are the things for which we should strive. Previous to ten years ago, not 5 per cent. of these cases were correctly diagnosed. Now I may safely say that from 20 to 80 per cent. are detected—the percentage, of course, depending upon the care and energy of the investigator, and the methods he employs. Concerning proper methods of treatment, our opinions must be based upon the results obtained by earnest and capable operators.

In regard to diagnosis. The electric lamp, though often deceptive, is very valuable, especially in antral affections. A unilateral umbra on the lower conjunctiva, with absence of crescentic illumination on the lower lid, and absence of the perception of light when the eye on the same side is closed, will in almost every case, especially if the patient is a blonde and moderately thin, prove to be due to some abnormal condition of the antrum, probably an empyema. I repeat the words used in my last report, that "the electric light is not infallible, but invaluable to one who knows how to use it." The electric tubular lamp placed above the inner canthus and against the frontal

¹ Read before the Section on Laryngology of the New York Academy of Medicine, January 23, 1895.

² See *The New York Polyclinic* for February and March, 1895.

bone is only corroborative on account of the relatively frequent irregularity of the frontal cells. The character of the secretion which flows from the natural openings of the cells will indicate the diseased area with more certainty than any other subjective symptom; but on account of the usually distorted and thickened septum, and the large and irregularly formed turbinals, we are prevented from seeing the natural openings or the adjacent parts in a great number of cases. In some cases where the nares are moderately free and roomy, the diagnosis of empyema of the antrum of Highmore can be made by observing the muco-pus issuing from the outer wall, beneath the bulla ethmoidalis. A little further forward, beneath the anterior end of the middle turbinated body, where the tubal and gutter portions of the infundibulum unite, is the place where the muco-pus will appear when there is a chronic suppuration of the frontal sinus. Discharge from the most anterior of the ethmoid cells will occasionally follow the latter course. The other anterior ethmoidal cells will discharge their secretions from the median side of the bulla ethmoidalis, nearly one-fourth of an inch from any of the points where pus from the other three compartments is likely to find exit. The posterior ethmoidal cells drain through the superior meatus downward over the posterior part of the middle turbinal. The sphenoidal cells discharge their contents from an opening in the upper part of their anterior walls, very near the septum, and above the superior turbinated bodies. Since the openings of the antrums, and the sphenoidal cells, are in the upper part of their walls, it is necessary to bend downward the head in order to obtain the greatest flow. In each suspected case, where the diagnosis cannot be made from an orificial discharge or other symptoms, or by transillumination, irrigation should be resorted to either through the normal opening with the syringe and curved tube, or with the trocar and cannula passed through the wall in the middle or inferior meatus, and in an extreme case through the canine fossa. When we have determined that the cavity is the source of a mucous, muco-purulent, or purulent secretion, the question arises: Can we acquire, from the character of the discharge, a reasonable conception of the pathological condition within the cavity? Combined with the history, I believe that usually we can. This is important because it indicates the line of treatment. Other things being equal, irrigation through the natural opening should be tried in nearly all cases for a while, and be persisted in for a few months in those cases where the returned fluid contains

decaying, cheesy, mucoid masses, and which show rapid improvement in the symptoms. On the other hand, when the irrigation fluid returns on succeeding occasions, laden with mealy, offensive pus, it is wiser to make an opening at once, 8 or 10 millimetres in diameter, through the malar ridge where the tip of the first molar os is situated. In the event of the first molar tooth being in place, the canine fossa would be the next point of election. In those cases where we cannot enter the normal openings, and when we are not permitted to puncture with the needle or trocar, we can frequently succeed in making a reliable diagnosis by patient and repeated examinations anteriorly and posteriorly, by removing obstructing tissues, and by tying down the soft palate in certain cases, until all spasm is relieved, or (as in Case 25) reach a decision by exclusion.

The most peculiar circumstance about cases of chronic antrum empyema is that the patients seldom complain of pain in the region of the superior maxillary bone. When it exists, which is only occasionally, it is referred to the supra-orbital, temporal, or post-occipital region. In cases of chronic disease of the frontal sinus, pain is almost invariably present, and is increased by bending the head downward. In ethmoidal and sphenoidal disease a dull pain is usually located deeply beneath the bone through the deep temporal and occipital regions. There is a class of cell diseases which we might place under the heading of acute or subacute sinusitis, with little or no stenosis of the natural opening, which improves or gets well during the summer, and has a decided tendency to recurrence in the winter. In these cases the mucous membrane becomes thickened and corrugated, leucocytes and thick pus escape, which becomes partly solidified and undergoes degenerative changes, and acts as a nidus for fermentative and irritating collections.

Under the heading of Treatment I have considered it expedient to classify the various pathological conditions met with, and have suggested the treatment which, in my experience, has been demonstrated to be the best.

CLASSIFICATION.

I. Acute catarrhal, suppurative, and infectious sinusitis, *without* complete stenosis of the normal outlet.

II. Acute catarrhal, suppurative, and infectious sinusitis, *with* complete occlusion of the normal outlet.

III. Subacute, chronic catarrhal, and suppurative sinusitis, with moderately obstructed opening, with or without decayed puro-mucoid *débris*.

- IV. Polypoid degenerations.
- V. Odontic periostitis and periodontitis.
- VI. Atrophic rhinitis.
- VII. Tumors and foreign bodies.
- VIII. Syphilis.

TREATMENT.

Class I. The cases of acute nature without stenosis are very common, and usually last from three to six weeks. They come on after the manner of an ordinary cold in the head, followed within a few days by very disagreeable feelings of fulness, oppression, and dulness; in some cases a certain amount of headache exists, and a dull feeling is present in the ears. This stage is relieved by a copious flow of muco-pus. During the course of these cases the ordinary treatment for a severe cold is the best. Most individuals who are subject to this condition have from two to four attacks during the year. The rational treatment is one of prophylaxis, which consists mainly in reducing and removing the intumescent and abnormal tissues within the nose, which should be done during the intervals of the attacks.

Class II. Acute Catarrhal, Suppurative, and Infectious Sinusitis, with Stenosis.—These cases, besides requiring the ordinary treatment, demand the evacuation of the retained secretion at once. A limited amount of a saturated solution of cocaine should be applied to the parts around the natural opening, and a persistent effort should be made to enter the cell with a tube, or, failing in this, penetration with trocar and cannula should be made use of, and the cavity should be carefully aspirated and irrigated. As soon as its patency is restored, the patient recovers rapidly. They demand the same treatment during the intervals as that described for Class I. Cases 6 and 45 are good types of this class.

Class III. Subacute and Chronic Catarrhal and Suppurative Sinusitis, with Moderately Obstructing Stenosis, Thickened Mucosa, with or without Retained Decaying Puro-Mucoid Débris.—This class of cases is the most fruitful source of post-nasal catarrh, and is rather difficult to diagnosticate accurately. The symptoms rarely indicate the latent pathological condition sufficiently to warrant the operative procedures necessary for a proper diagnosis or treatment. Attempts should be made to irrigate these cases through the natural openings, and frequently we are rewarded with a cure or decided relief, as shown in two cases, Nos. 5 and 7. It is taken for granted that in all classes of cases any abnormal intranasal condition should be rectified. When these cases resist the irriga-

tion treatment and are of sufficient importance, a counter-opening should be made in the cell walls and proper curettage and drainage should be carried out.

Class IV. Polypoid Degenerations.—This class furnishes by far the majority of the operative cases. Woaks, Bosworth, Casselberry, and others have well described them and their treatment. Cases 2, 3, 9, 10, 11, 12, and 15 of my series typically illustrate this class. Large counter-openings, packing, careful and repeated curetting, good drainage and irrigation, are essentials for successful treatment.

Class V. Odontic Periostitis and Periodontitis, Sometimes Terminating in Caries and Necrosis.—It is universally conceded that the offending tooth in this class of cases should be removed, and, if the case is of long standing, the cavity should be opened, carefully curetted, and dressed. Formerly, following the advice of many dentists and surgeons, after the tooth had been extracted I drilled upward through the socket; but the after-history of such cases has caused me to regret it, Cases 3 and 4 being unfortunate examples. The principal objectionable features are: the distance through the bone to the floor of the antrum; the dense, thick tissue of the gum; the difficulty experienced in curetting, the long walls of the opening preventing the proper play of the handle of the curette; the easy entrance of food into the antrum, and the necessity, while eating, of plugging the tube when one is worn for drainage. I take it for granted that every one would prefer the lower border of the malar ridge for penetration in all cases where the tooth has been absent for some time. You will find this point of election marked on the skull which I pass around. The most serious obstacle which I have met with is the decided objection of the patient to losing a tooth.

In nearly all extensively diseased cases, where some other operation was performed in place of the one through the malar ridge, the patient and myself have both had cause to regret it. On the other hand, all of the worst types of cases have done well when the operation was properly performed through the point of election. The surgeon has complete subsequent control of the antrum, and can keep it open and curette it at any time without inconvenience to himself and with very little pain or annoyance to the patient. The canine fossa, where the bone is very thin, is the next point of preference; the main disadvantages are its distance up under the cheek and the elevation of the opening above the floor of the antrum.

The results in the cases where I penetrated

through the walls of the meatus have not been so satisfactory as those reported by Grant and other European writers. I have noticed that many cases, under careful and thorough curetting, ultimately did better than those which were extensively or over-curetted, or those in which the curette was used too moderately. I have found the greatest benefit from recuretting, at intervals of about one month, until all bare bone is covered and granulation tissue cicatrized.

Class VI. Atrophic Rhinitis.—The bacilli of atrophic rhinitis frequently find a permanent home in the sinuses. Robertson, of Newcastle-on-the-Tyne, has done some original and efficient work in this class of cases. I have found two kinds of cases apparently caused by this affection: one in which the semi-solid putrid *débris* has become confined in the cavity, and acts as a causal factor in keeping up the diseased condition; and the other in which the tissues have undergone degenerative changes. Irrigation will frequently relieve the first; curetting and drainage would be necessary to restore the latter.

Class VII. Tumors.—Tumors occasionally develop within these cavities. Early diagnosis is of the greatest importance, for it frequently enables the surgeon to save the patient's life by timely removal, and rescues him from a condition of intense pain and distress. Among the benign tumors, mucoceles and osteomata are the most important. The mucoceles usually develop in the ethmoidal cells, and extend antero-posteriorly through the long diameter. This is accounted for by the intercellular walls offering the least resistance. They generally extend backwards, breaking down all the partition walls and finally reaching the posterior wall of the sphenoid cells. At the same time they extend forward into the frontal sinus or against the orbital plate, cracking and pushing the same above the inner canthus of the eye. If these cases could be recognized by the symptoms and by intranasal inspection, there would be more credit for the rhinologist and less opportunity for the oculist to puncture the protruding sac.

Among the malignant tumors, sarcoma (long- and round-celled) and osteo-sarcoma are the most common. Cases 31 and 34, which belong to this class, are worthy of note. The prompt removal of the superior maxilla in Case 34 has apparently cured him of an otherwise fatal disease. Case 31 was considered inoperable, and died a few months afterward. The toxins of erysipelas and the bacillus prodigiosus modified the patient's symptoms favorably for a time.

Class VIII. Syphilis.—Gummata frequently develop in the walls of one of the accessory sinuses. I have now under observation three cases of gumma of the internal wall of the antrum of Highmore. They are doing well under the iodide of potassium and occasional scraping of the necrosed bone. The openings into the cavities are about one-half of an inch in diameter, and quantities of sticky muco-pus escape. This is gradually lessening under cleanliness and irrigation.

There are a few points concerning the treatment of these cases to which I would like to direct your special attention:

1. That no case of long-standing and extensively diseased area can be considered cured within a few months after the operation. The aperture should be kept open for from six months to a year.

2. The electric light not only indicates the direction to be followed in the investigation, but also furnishes the courage and desire to ascertain the condition of the cell.

3. The malleable-handle curettes are very valuable when used as diagnostic or searching probes. One can learn to make out the pathological condition of the cells through a trained and experienced touch about as well as when the parts are seen.

4. The headed rubber tubes, made by Meyrowitz, have proved to be the most effective and pleasant means of drainage. They can be cut to any length, and are elastic enough not to irritate the gum and cheek.

I append the histories of some of my series of cases, trusting that you will take warning from the negative or ineffectual action in the unfortunate ones, and that you will be able to obtain some useful information from those that were successful.

CASE 25 stated November 29, 1893, that he had had bronchial trouble all his life, annoyed by a profuse discharge of mucus from the nose and pharynx for years, and troubled with coughs, and a copious discharge from the bronchial tubes, with one bronchial hemorrhage in September.

Both ethmoidal regions were filled with polypi, and muco-pus issuing from both hiati and ethmoidal cells. The electric light produced a dark umbra beneath both eyes.

Removed polypi and the anterior ends of the middle turbinated bones, and irrigated the antrums for several months. The patient gradually improved, bronchitis almost disappeared, and there was but little mucus in the nostrils. He gained about 25 pounds in weight, and showed decided improvement in every respect.

CASE 26, aged 51, informed me in May, 1893, that he had tried many physicians and remedies

without any relief. A muco-purulent secretion dropped incessantly into the rhino-pharynx. At times this was yellow, and on rare occasions was blown from the anterior nares. His vision became very dim every morning, and there was slight tinnitus and impaired hearing. For years he had sought climatic relief from his catarrh. Three winters were passed in southern countries or on his yacht in southern seas, and the summers in northern and mountainous regions, the only relief being an occasional abatement of the extremely disagreeable catarrhal discharges.

After a long and careful examination, found the nose large and deep in both directions; septum slightly deflected; the turbinals bulged toward the septum; a few small polypi in the right middle meatus, but the nose was free from all secretion so far as anterior inspection could detect. There was a constant stream of muco-pus flowing down into the pharynx on either side of the soft palate near the Eustachian tubes, and he expectorated every few minutes. Transillumination produced a decided umbra beneath the left eye; with but a very slight translucency below the right inferior eyelid. I could not enter either antrum through its hiatus, although I tried many times on different occasions. It was a long time before I could train the soft palate to drop low enough so that I could see the posterior tips of the inferior turbinals. I could then detect the muco-pus issuing beneath the outer lower parts of the posterior inferior tips, near the pterygoid plates and palate bone. I informed him that I suspected antrum trouble, but could not prove it, and offered to make an exploratory puncture, but he refused to permit it because I would not positively promise relief. I examined and treated him regularly for several weeks, and he expressed some relief after the reduction of the tissues by cautery, removal of the polypi, and energetic spraying and douching. Summer came on, and I did not see him again until the fall.

He informed me that he had consulted other specialists since he saw me, and that one of distinguished reputation advised him not to allow me to operate on him, as he did not need it. He finally consented, under pressure, to submit to the malar-ridge operation. All his teeth were in, excepting the first right upper molar, and they seemed to be in good condition. I cocainized the tissues over the right malar ridge, made the usual incision, exposed the bone and penetrated it at the point of election with the smallest-sized burr drill, propelled by a one-eighth horse-power electric motor. This was rapidly accomplished with very little pain. I passed a saturated solution of cocaine on a cotton applicator into the antrum, enlarged the opening to about four millimetres, inserted a small-sized malleable-handled curette, and with astonishment found the anterior part of the antrum smooth and in a moderately healthy condition. On passing the curette backward and downward, a soft, spongy mass was

found, which proved to be nearly an ounce of large granulations, beneath which the bone was exposed and carious to the extent of more than a square inch. After enlarging the opening to eight millimetres, a quantity of muco-pus was curetted away with granulations and softened bone. I packed the cavity with iodoform gauze, and the discharge from that side stopped at once. After an interval of several weeks had elapsed I had the first molar on the left side extracted, and a similar operation to the one done on the other side was performed, and the same careful treatment carried out. After this, all discharge into the mouth stopped. The mucosa throughout this cavity was thickened to an extraordinary extent, and came away under the curette in large pieces covered with muco-pus. It seemed to be composed of hypertrophic rather than granulation tissue. Occasional pieces of soft and roughened bone were detected with the curette. The cavities were drained and irrigated for several months, and curetted at intervals. I examined him about three months ago and found that translucency under each eye was increasing. There were no lumps of mucus in the antrums when they were irrigated. Catarrh was a thing of the past. He had not been troubled with dimness of vision since the operations.

CASE 27, aged 26, had been suffering for several days from severe pain and oppression in the right side of the face, with a sensation as though the face and orbital cavity would burst. Her septum was deflected with an ecchondrosis, turbinals very much swollen, and trans-illumination produced umbra under the right eye. I reduced the intumescent tissues with cocaine, and found the tissues about the right hiatus swollen and papillomatous in appearance. On introducing one of the smallest silver tubes the confined pus escaped with the irrigating fluid, which gave her immediate relief. I removed by snare a fungating papillary growth, about three millimetres in diameter, from the internal margin of the hiatus. After several irrigations at three days' intervals the cavity gradually returned to a normal condition.

CASE 28, aged 27, consulted me in September, 1893. He gave a history of extreme suffering, which had existed more than twelve years. His principal symptoms were: almost unbearable headaches, nasal catarrh, constant dropping into the throat, a tickling sensation, and a great excess of sputa, chiefly from the bronchi, in the shape of large grayish and greenish lumps. He was very nervous and unsettled mentally, and did not sleep well; he was given morphine by his physicians until the habit was almost acquired, and he then resorted to the extreme use of alcoholic stimulants in order to deaden the pain.

Polypi were demonstrated in both middle meati, with muco-pus issuing from both anterior ethmoidal cells, both frontal sinuses and antrums of Highmore, and the right posterior ethmoidal cells. I removed the polypi and the left middle

turbinal, passed the smallest sized curette into the frontal sinuses and irrigated the antrums, frontal sinuses, and anterior ethmoidal cells with the silver tubes. He experienced great relief for a while, then the frontal headaches on the right side returned and were very severe.

On November 10th, under ether, I performed an improved frontal-sinus operation, as follows: After the eyebrow was shaved, a perpendicular incision was made over the centre of the right nasal bone, extended upward across the articulation of the nasal and frontal bones to the middle of the space from which the eyebrow grew on the supra-orbital ridge, a point about twelve millimetres from the median line of the skull; from thence the incision was carried outward about ten millimetres to within two millimetres of the supra-orbital notch; from there it was made, at right angles to the latter, upward about fifteen millimetres on the forehead. The blood-vessels were compressed. The bone was well exposed and the flaps retracted. An opening was chiselled into the frontal sinus by commencing about twelve millimetres to the right from the median line of the frontal bone; the point of commencing was on a level with a point about one and a half millimetres below the supra-orbital notch. The opening was enlarged to twelve millimetres in diameter. Polypi, granulation tissue, and pus were found in the cavity, which was carefully curetted. The incision above the brow was brought together with sutures, and united by first intention without any scarring. In making the opening care was taken that none but the under surface of the supra-orbital ridge was removed and that no injury was done to the superior oblique muscle. The cavity was packed with iodoform gauze for a month, after which it gradually healed. The patient has been free from discharge and pain from this sinus since the healing. The small scar is not objectionable. I subsequently opened his antrum through the malar ridge, and curetted the polypi and granulation tissue. The cell was kept open with the rubber tubes for several months. No secretion can now be detected coming from the hiatus.

In the summer of 1894 I removed the middle turbinal on the left, cut into the ethmoidal cells through the floors, and curetted them and the left frontal sinus; then I irrigated the left frontal sinus, left antrum, and left ethmoidal cells. The discharges were nearly all arrested and he is apparently well, but it is probable that the left frontal sinus some day will need the same treatment as that employed on the right. In a recent letter he said that he felt well and could do the work of two men.

CASE 29 stated, June, 1893, that for fifteen years he had been suffering from catarrhal pain and offensive discharge which had been much exaggerated for the past five years. Several operations had been performed upon his nose, but had pro-

duced no apparent relief. The odor was so extremely disgusting that one was nauseated while making the examination. I found some polypi and carious bone in the right middle meatus, with mucopurulent discharge flowing from the anterior ethmoidal cells and the antrum of Highmore. The electric light, placed in the mouth, showed a very bright illumination beneath the left eye, and an extremely dark umbra beneath the right. On June 19th the decayed roots of the two posterior molars and a part of the alveolus were removed, the cavity drilled and found full of granulation tissue, pus, carious and necrotic bone, and cheesy débris. When cleared it was then packed with iodoform gauze, which remained in for several days, and was afterward irrigated regularly, and lightly curetted upon several occasions. The patient seemed to be a different man from this time on. Previous to the operation he had been despondent and wretched in every way; afterward he became hopeful, cheerful, bright, and active, and entered upon new duties with energy. I received a letter from him several months after the operation, in which he informed me that he was apparently well, save a little mucous discharge, and felt himself redeemed from a life of wretchedness and uselessness.

CASE 30, in April, 1894, stated that all her upper teeth had been extracted in 1891, and that immediately afterward she suffered from severe pain in the right antrum, which lasted for one week. Then pus was discharged from the right naris, with abatement of the pain. After this she was fairly well for a year; then her general health became very poor. Another abscess formed in the antrum. Her family physician drilled an opening through the alveolus, and pus flowed out. She informed me that she had adopted the novel method of wearing a rubber tube, extending from the antrum out of the corner of the mouth, until seven weeks since. About two months previous to her coming to me, the general surgeon had made a large opening through the alveolus and curetted the cavity. Inspection demonstrated a number of polypi growing from the upper, the anterior, and the lateral walls of the antrum. One large polyp grew from the bone beneath the orbit, extended through the hiatus into the nose, filled the rhino-pharynx, and rested on the soft palate. The polypi were removed with a snare and curette. New ones developed several times, but were finally eradicated. The patient is well now, and comfortable.

CASE 31 applied to me in May, 1894, complaining of great pain in the right cheek under the eye, which extended back to the ear. Upon examination I found a swollen, bulging condition of the parts above the alveolus and in the canine fossa; there was absence of sensation in the integument of the cheek; the tissues of the middle meatus were edematous and semipolypoid. I made an exploratory operation through the canine fossæ; the bone was soft, and the cavity was filled

with a peculiar excrescence which seemed to penetrate the softened bone; all the symptoms were those of osteoma-sarcoma. The case was deemed in operable because the process had extended into the ethmoidal-sphenoidal bones and cribriform plate of the ethmoid. Toxins of erysipelas and the bacillus prodigiosus were tried, with some relief at first, but the patient gradually grew worse, and died after a few months. In my opinion, if the proper diagnosis had been made in the incipient stage of the disease, and the superior maxillary bone removed, she would probably have been cured; undoubtedly her life would have been prolonged many years.

CASE 32, November, 1893, complained of pains and of a dull, heavy feeling in the head, weak chest, loss of voice at times, cough and expectoration in the mornings, and of a thick and copious discharge from the right nostril. He had been suffering in this way for twenty years. Upon examination the electric light produced an umbra beneath both eyes; but the shadow was much more intense under the right; a small polypus could be seen in the left middle meatus, and several polypi, with flowing muco-pus, in the right middle meatus. I removed the polypi and opened the antrum with the electric drill through the right malar ridge, the first molar tooth being absent; curetted from the cavity polypi, granulation tissue, and pus; I then packed the cavity with iodoform gauze. After a few days I removed the gauze, and gave him instructions to irrigate the cavity with the usual fluid. The last time I saw him, several weeks after the operation, he was doing very well.

CASE 33, aged about 25, came under my observation several years since. She had suffered with severe headaches from childhood, from which she was seldom free; in the early morning she was troubled with sneezing, a tickling sensation in the nose, and a watery discharge, which abated about 2 P.M. The headaches were supra-orbital, and rather more severe on the right side; the septum was deflected to the left; inferior turbinates hypertrophied. I treated her for several years, reducing the turbinates and the mucous membrane over the tubercle of the septum; removed the anterior tip of the middle turbinate; cut away part of the anterior ethmoidal cells, and tried to enter the frontal sinus through the infundibulum with probes and curettes; invariably the end of the instrument seemed to be arrested by a solid substance about where the floor of the frontal sinus should be. Under ether I made a curved linear incision along the side of the nose and beneath the brow, to the supra-orbital notch; I consented, contrary to my better judgment, to drill a hole into the sinus. I drilled to the depth of four or five millimetres, until I came to a space where two layers of bone were in juxtaposition, and separated by a reddish streak presenting somewhat the same appearance as that found between geological strata. I decided

then that if I had used the chisel the results would have been much more satisfactory to both myself and the patient, and determined to abandon the drill hereafter in this class of cases.

The patient was afterward operated upon by a general surgeon, who chiselled away the anterior wall of the frontal sinus and found a large osteoma completely filling the cavity and pressing firmly upon the walls. The patient was decidedly relieved from her headaches for a while, but I understand that they have returned with their original severity.

CASE 34 was sent to me by a general surgeon in February, 1894, for my opinion concerning the right antrum of Highmore. He had been troubled with a diseased tooth, pain in the right upper jaw, and with an extremely unpleasant discharge for two years. A diseased tooth had been extracted. In August, 1892, a local dentist opened the antrum, but the pain continued. In September, 1893, Dr. Wyeth (the patient being under ether) opened and curetted the antrum through the tooth-socket, but little relief from the discharge was experienced. In January, 1894, Dr. Wyeth re-curetted the antrum, but the unfavorable symptoms continued.

In passing the curette over the antrum I noticed a thick and peculiar lining on the antrum walls, which produced very much the same sensation as one experiences when scraping a raw potato. I expressed my opinion that it was a malignant neoplasm, and, upon Dr. Wyeth's suggestion, a specimen was sent to Dr. Prudden, who reported large-celled sarcoma. In March, 1894, Dr. Wyeth removed the superior maxillary bone, with part of the pterygoid plate. The patient recovered from the operation, and seems to be doing very well with an artificial jaw, and continues in the practice of his profession as a lawyer. There remains one unfortunate result: the continuance of a constant sweetish and extremely disagreeable taste in the mouth. There is a little muco-pus issuing at the point where the section of the nasolachrymal duct was made.

CASE 35 applied to me for an opinion in May, 1894. He had consulted several specialists, and had received various opinions in regard to his trouble. Muco-pus was issuing from the right middle meatus, and seemed to be due to a burrowing empyema beneath the periosteum in the nasal wall of the antrum of Highmore, as gentle pressure with the probe along the middle meatus caused pus to flow actively. I informed him that he was suffering from empyema of the antrum, and should submit to an operation. I afterward received a letter stating that a tooth had been removed and the antrum bored into, with relief from the symptoms.

CASE 36 was found suffering intense agony in the right side of her face, beneath the eye; she had not slept for many hours. Considerable tenderness existed in the canine fossæ, and I found it impossible to enter the antrum by gentle means,

as it was closed and bulging. On account of her delicate condition I did not use the exploratory trocar, but advised perfect rest, anodynes, steam inhalations of benzoin, turpentine, carbolic acid, and eucalyptol. I was rewarded in a few hours by a sudden, copious, and offensive discharge of muco-pus from the right nostril, with immediate relief from the symptoms. The patient made an uninterrupted recovery.

CASE 37, in September, 1894, sought relief from a post-nasal catarrh and an unpleasant odor, which seemed to be principally on the right side, and which had troubled her for ten years. The nostrils were fairly roomy and some muco-pus was lying on the right side of the soft palate. The right antrum was dark when the electric lamp was used. I passed a tube through the hiatus, and a quantity of mucus and mealy pus was dislodged. Her physical condition would not permit a surgical operation for several months, so I irrigated the antrum four to six times a week for over a month. The discharge stopped, and she improved decidedly in feelings. She lives in a distant city, and informs me that the catarrh is returning, and that she intends to come on and have the alveolar operation performed.

CASE 38, aged 48, commenced to have neuralgia at the age of thirteen in the right upper jaw, which became much worse at eighteen. The upper teeth were extracted with a part of the alveolus at this time. The pain then ceased until nine years ago. Every spring for eight years she has had very severe attacks of facial neuralgia on the right side, which last from one to three weeks. In February, 1894, the pain returned and continued up to June, and was of the most excruciating character. She consulted me at this time. She gave a history of several attacks of a copious discharge of muco-pus from the right side, attended with fulness and dulness in the antrum and severe occipital headaches.

I opened the antrum with the electric drill through the malar ridge. The bone was very soft and had an uneven surface and bulged outward against the cheek. There was a little muco-pus in the cavity, with very slight granulations and small roughened areas. The cavity was irrigated and kept open. The neuralgia ceased; the patient was comfortable and relieved until the 5th of the present month, when the pain returned with all its original intensity. On the 17th I removed the tissues which had contracted over the opening in the bone and recurred the cavity, removing a quantity of tissue with some resemblance to an osteo-sarcomatous excrescence. The pain has ceased since the 17th, and I have sent the tissue to the microscopist for examination.

CASE 39, in 1894, was suffering from nasal catarrh which was rather profuse, and with frontal headaches; his general health was impaired, and he was in a depressed condition mentally. He informed me that he had been treated by specialists for some time, one of whom removed the left

middle turbinate body. After this operation he had experienced some relief from the symptoms of fulness and from the headaches, but the discharge had not lessened. There was a large cavity in the region of the middle meatus, which was caused by the absence of the middle turbinate body. I succeeded in entering the antrum through the natural opening; irrigated it at intervals of about a week for more than a month. Very offensive muco-pus was dislodged by the irrigating fluid. The patient improved decidedly for several days, and then the objectionable symptoms would recur. He refused to submit to an operation through the alveolus or the canine fossa, but I hope to induce him to do so, and will report the case at some future time.

CASE 40, F. G., was referred to me by a neurologist. He had complained of the most intense neuralgia in the right side of his face for three years past. The antrum of Highmore, by every test, proved to be in a good condition; the electric light placed in the mouth produced a bright spot under the eye; no secretion flowed from the meatus, and there was nothing abnormal found in the antrum.

It was suggested that possibly some tooth-root or an exostotic condition was the cause of the neuralgia, most of which was located in the walls of the antrum, and I was requested to make an exploratory puncture. I drilled an opening, 4 millimetres in diameter, through the antrum wall at a point on the anterior part of the malar ridge, and it was interesting to note the glassy smoothness of the antrum walls. A clear and normal secretion came from the opening with the dull curette, which had been carefully passed over the internal surface of the antrum.

This is the only healthy antrum I have ever opened, and the difference in the sensation, given by the probe and the curette, is so great that it has been of the utmost assistance in determining the pathological states and areas of respective sinuses which I have opened.

The patient was partially relieved from the neuralgic symptoms—this was probably due to the section of the anterior dental nerve; and the wound healed, by first intention, in four or five days.

CASE 41 in 1894 was suffering from a thick, crusty, offensive discharge from the nostril. Inspection showed a gummatus degeneration of the septum and the left internal wall of the antrum of Highmore from the hiatus downward, involving the middle part of the inferior turbinate. I removed the degenerated masses and some necrotic bone; found the left antrum filled with thick, muco-purulent tissue and *débris*. The cavity was cleansed, and curetted around the margins of the opening. The patient rapidly improved under 75 grains of potassium iodide three times daily.

CASE 42 applied to me in 1894. She was suffering from such severe pains in the left side of her head that she had only slept a few minutes at a time for several nights and days. I re-

moved the gummatous wall of the left antrum; found the cavity extensively diseased and full of putrid secretion and tissue *debris*. Besides local measures I gave her iodide of potash; controlled the pain for a few days with morphine. She improved rapidly, and is now apparently well.

CASE 43, aged 29, in March, 1894, had been suffering for some time from a profuse discharge in the nostrils, which was more excessive on the left. The septum was deflected to the left, and there was an echondrotic growth. On the convex surface muco-pus was flowing from the obscure region of the left middle meatus, and there was a moderate amount in the right nostril. He complained of severe pain in the region of the left antrum of Highmore, and also of temporal and orbital neuralgia. I removed the septum growth and the anterior end of the middle turbinated, and entered the hiatus with an irrigating tube. A quantity of degenerated pus and mucus came away with the fluid. There was a certain amount of improvement after the treatment, but the pain and muco-purulent discharge continued. He refused an operation at first, but after persistent persuasion he submitted to the malar-canine operation, which was performed on June 8, 1894. The first molar tooth was extracted and a large opening, at least ten millimetres in diameter, was chiseled into the walls of the cavity. The bone over nearly the whole surface of the antrum was not only denuded of its mucous membrane, but was carious and necrotic in many places. I curetted the cavity carefully and removed some of the largest granulations that I have ever seen come from the cell. The cavity was packed with iodoform gauze for several days; the pain subsided, and the patient improved in flesh and appearance. Granulations are gradually forming over the diseased bones, which require to be curetted occasionally. He wears a rubber tube and irrigates the cavity regularly. Pus is rarely detected in the small, thick mucous collection which passes away with the fluid. This case is classed among the severest forms, and takes from one to three years to be relieved so that the opening can be permanently closed.

CASE 44. Upon examination I found him suffering with a gummatous degeneration of the septum, and a large opening in the internal wall of the antrum of Highmore, extending down nearly to the floor of the nose. There was a polyp, as large as the first joint of the thumb, protruding through this opening into the nostril. I removed the polyp, curetted away a quantity of pus and degenerated gummatous tissue, and used the usual irrigation and potash treatment. The patient made a rapid recovery, and his weight increased from fifteen to thirty pounds within a few months.

CASE 45 sent for me to visit him. I found him almost in a state of collapse, and in great agony. He had been suffering for several days with intense pain together with a full feeling

in the right frontal sinus. I sprayed the nostril with cocaine and applied it on cotton; found the hiatus and infundibulum very much swollen and the middle turbinated body moderately so. I passed a tube into the infundibulum and injected gently but firmly a borated solution, and was rewarded with a gush of pus and offensive gas, and with an immediate cessation of the severe symptoms. The muco-purulent discharge continued for a few weeks, but the patient recovered completely.

VERATRUM VIRIDE IN PUPERAL ECLAMPSIA.

BY F. K. WILLIS, M.D.,
OF WATKINS, KAN.

My object in referring briefly to this drug is in hoping to bring it to a greater prominence before the profession. Those who have used it will, I am sure, substantiate me when I say that it occupies entirely too obscure a position in our professional advancement. Why this sovereign remedy has not attained a wider reputation is, I think, due to feared depression following its use—a fear entirely unfounded. This statement is borne out by the absence of a single recorded case of death attributable to its use in eclampsia. Indeed, Periquet, quoted by Jewett, states that "he has found but a single recorded fatal case from its use, that of a feeble child, aged one year and six months, to whom thirty-five drops of the tincture had been given in divided doses."

The action of veratrum viride in eclampsia seems to be but little understood by the profession at large. It probably does not have any direct anticonvulsive properties. "Lethal doses produce convulsions in animals, doubtless due to accumulations of carbonic acid in the blood."¹

It would seem that its beneficial action in eclampsia is twofold—its characteristic action on vascular tension and its diuretic action. There can be no doubt that it *relieves* (and I use this term advisedly) convulsions by paralyzing the vaso-motor nerves, "thus relieving spasm of cerebral vessels and consequent cerebral anemia, to which convulsions are believed to be due."² Were that its only action, relief would be only temporary, but it also relaxes the tension of the renal vessels, the secretion of urine occurs freely, thus eliminating the poison floating in the blood, and to this action only can be attributed its *curative* power in eclampsia. I believe all authorities concur in the opinion that eclampsia is essentially a toxemia resulting from failure of elimination of

¹Barthalow.

²Percy, quoted by Jewett.

poison or poisons, principally by kidneys, but to some extent by liver, lungs, and intestines.

Experiments upon myself and office-boy show a decided increase in urinary excretion after taking small doses—3 to 5 min. fluid extract. Taking into consideration the fact that the dose was many times smaller than total dosage necessary for an eclamptic, it can readily be seen how much greater diuretic action there would be were the dose increased. This action would also be much more noticeable when renal vessels are suffering under excessive vaso-motor tension than when in health.

I shall only report in detail, briefly, two cases, both admirably illustrating its diuretic action, and incidentally its claim to rank first of all remedies in puerperal eclampsia. In each case it was used after all other resources, bleeding excepted, had failed.

CASE I.—Mrs. B., primipara, aged 20 years. Had been delivered of twins, after an easy labor, twelve hours previously. I found woman comatose; pulse hard and fast, estimated at 180 per minute; great edema. I introduced a catheter and secured about an ounce of urine, which, upon boiling, yielded three-quarters its bulk of albumin. At outset she had been placed in hot bath. Morphine and chloral had been given, and chloro-roform was pushed. She had grown rapidly worse, coming out of one convulsion only to enter another of greater severity. In all she had about twenty-five.

I advised veratrum. Fifteen minimis of the fluid extract were given hypodermatically, followed in fifteen minutes by 5 min., and that by a similar dose in half an hour. After second dose the convulsions ceased, to return no more; pulse gradually fell to 50 beats per minute; urine was passed involuntarily; edema rapidly disappeared; consciousness was regained in twelve hours, and patient made an uninterrupted recovery. It might not be amiss to here state that she has since been twice pregnant, presenting each time all the prodromata of eclampsia, which each time disappeared under veratrum, she going to term and each time giving birth to a fine boy.

CASE II.—Occurred in consultation practice of my friend, Dr. Campbell, of Troy, Kan., and is by his permission reported. Mrs. G., multip., aged 29, pregnant four months. When seen by him, presented a highly edematous condition, comatose, pulse 160 per minute. Catheterization secured about half an ounce highly albuminous urine. Attending physician had pushed chloroform, morphine, and chloral. Patient had rapidly grown worse from outset. Veratrum was suggested by Dr. C. Five minimis of Norwood's Tincture were given hypodermatically every hour. After second dose, pulse fell to 70 beats per minute. Convulsions ceased, kidneys resumed

their function, and patient made an early recovery. Induction of labor was recommended, but not consented to at the time.

Veratrum viride not only arrests convulsions, but in several cases in my hands it has prevented them when threatened. None has suffered eclamptic convulsions who came to me complaining of headache, nervousness, presenting some edema, a full, hard pulse, etc. In this class of cases, 5 min., two or three times daily, according to urgency of case, should be given. When paroxysms occur, always administer hypodermatically 15 min. fl. ext. at once, followed in half an hour by 5 min., repeated if necessary. It may be necessary to continue administration for twenty-four hours or longer to prevent recurrence; of that the attendant must be the judge. Generally speaking, the pulse should be held at 50 or 60 for a day or two.

CLINICAL LECTURE.

THE RESULT OF VAGINAL HYSTERECTOMY; PROLAPSUS UTERI.¹

BY E. E. MONTGOMERY, M.D.,
OF PHILADELPHIA;

PROFESSOR OF CLINICAL GYNECOLOGY IN THE JEFFERSON MEDICAL COLLEGE; GYNECOLOGIST TO JEFFERSON AND ST. JOSEPH'S HOSPITALS; PRESIDENT PHILADELPHIA OBSTETRICAL SOCIETY.

CASE I.

GENTLEMEN:—One week ago I did before you a vaginal hysterectomy upon a woman who had previously had a ventro-fixation and lost an ovary. You remember we had considerable difficulty in separating the band between the fundus and the anterior abdominal wall. She did fairly well for the first forty-eight hours, when we removed the clamps. At the removal of the clamps I noticed that one of them was stained with a slight discharge of blood. But careful examination of the tissues in the vagina did not reveal any sign of bleeding. After visiting the other patients in the ward and before leaving the building, I was called to the patient and found the dressing saturated with blood. The gauze packing was removed from the vagina and the cavity thoroughly repacked, which apparently controlled the hemorrhage. She however, did badly. She could not retain nourishment, was continually vomiting, and this persisted for the next two or three days in spite of everything we could do. The gauze was removed at the end of forty-eight hours and showed that the hemorrhage had been controlled. The patient continued with disturbance of the alimentary canal and inability to retain nourishment. Yesterday morning she suddenly went into a state of collapse and died. The autopsy disclosed peritoneal inflammation. It was found that the pelvic peritonitis which had developed, in a patient enfeebled by poor nutrition prior to her entrance to the house, and the resulting hemorrhage, had

¹ Delivered at the Jefferson Hospital, January 28, 1896.

caused death. I am sorry to have had to give you such a history, but I could not otherwise be true to my promise to you. I show you the report kept of this patient, in which you see that the temperature was subnormal prior to the operation. Subsequently the highest temperature was $100\frac{1}{2}$ °, but after the removal of the clamps following the hemorrhage it fell to 97°. She, however, reacted the next day, and following that it remained above normal until just before her death. This case also taught us an important lesson regarding ventro-fixation. There has been considerable question of late as to the influence of this operation on subsequent pregnancy. Numbers of cases have been reported in which women have aborted, the uterus has ruptured, or dystocia has resulted, owing to the position of the organ. It is important in every operation upon the woman not to lose sight of its possible effect upon her life, or that of her offspring should she become pregnant. Although the operation may give relief from the symptoms the patient experiences, if it causes danger in the performance of the physiological process to which a woman may at any time be subject, we should hesitate as to its performance. I this morning did a ventro-fixation, and in the light of this experience, instead of using buried sutures, I introduced the lower two sutures through the abdominal walls, exclusive of the peritoneum, and the fundus of the uterus, purposely turning back the peritoneum to bring the covering of the uterus in contact with the muscular layer of the abdomen. This procedure will make a pretty firm band of union, but not so resisting as if buried sutures had been placed to keep the parts continuously in apposition. As the sutures only remain ten days, the adhesions become to some degree stretched and the band of union is longer and more likely to give way in subsequent stretching than would the band resulting from a more firm fixation by buried sutures.

CASE II.

The next patient is 63 years of age; she has had four children, with all of which the labors were difficult. She is a laboring woman. She has noticed for the last few years a protrusion from the vulvar orifice, which has increased within the last few months. It is red, inflamed, and as I push it to one side you notice an orifice, the borders of which are denuded and angry. This is the cervix, which has been lacerated and undergone an ectropion. Now, in this patient we have a protrusion from the vulvar orifice, and you naturally ask, what is it? A woman will come to you with such a protrusion and will tell you that it is falling of the womb. It may be a growth in the vagina, a vaginal tumor, a prolapse of the uterus or of the anterior or posterior wall of the vagina. There are numbers of conditions which may cause a projection from the vulvar orifice and should be kept in mind in determining the diagnosis. In a protrusion from the orifice of the vulva, then, we remember the possibility of prolapse of the uterus, prolapse of the vaginal wall, either anterior or posterior, the anterior being known as cystocele, the posterior as a rectocele. We may have a prolapse of the entire vagina, with the cervix protruding from its center, without prolapse of the uterus, a condition known as hy-

pertrrophic elongation of the cervix, the fundus retaining its normal position. The cervix is dragged upon by the heavy vaginal walls, which results in its elongation. We may have a protrusion from the vulva of polypoid growths from the uterus, which drag upon the organ until the growth protrudes from the vagina. We may have the protrusion of the fundus of an inverted uterus; so it is important in any condition to make careful examination to ascertain the character of the protrusion, and not take for granted, because there is a protrusion, that it is a prolapsus. Prolapsus of the uterus may arise from a variety of causes. The causes may be divided into three classes: Those which result from decreased support, as in laceration of the vagina or pelvic floor, which no longer affords the proper support for the structures above, and from which the intra-abdominal pressure, having nothing to resist it, drives out the contents of the passage, causing a hernia. Secondly, we may have prolapsus as a result of increased intra-abdominal pressure, the presence of a growth which fills the abdominal cavity or rests upon the uterus, thus pushing it out. In a patient with a large amount of fat, and the abdomen greatly distended, the intra-abdominal pressure is increased, which renders the orifices less resisting, and consequently favors the tendency of the contents to escape. Third, we may have the condition arise as a result of increased weight in the organ itself; thus from subinvolution of the uterus, or growths in its walls, as the presence of a fibroid tumor. The decreased support, the increased intra-abdominal pressure, and the increased weight of the organ may all be associated in the same individual. Taking the first cause into consideration, we can readily understand if we have a laceration of the pelvic floor which extends back to the sphincter ani, or to one side of the sphincter, tearing through the levator-anus muscle, the vulva stands open, the anus is pulled back, there is a consequent want of support of the anterior segment of the pelvic floor, the constantly filling bladder without support sags, and the intra-abdominal pressure drives it and the uterus toward the vulvar orifice. A portion of the bladder becomes situated below the level of the internal orifice of the urethra. This portion of the sac is consequently emptied of urine with difficulty. Some of the urine will remain unevacuated. In this sac the accumulating urine and the mucus become decomposed, producing an ammoniacal odor, and an irritating fluid which causes a localized cystitis. The salts are deposited, and if there is a small plug of mucus it affords a nucleus upon which large calculi may form. The sagging of the anterior segment of the pelvic floor is recognized as a cystocele. As the anus is dragged backward, accumulation of fecal matter in the rectum causes it unsupported to sag until it rolls out, forming a sulcus below the level of the anus. If the patient is lying upon her back, with limbs separated, and is directed to strain, you will see the eversion of the anterior and posterior vaginal walls. If the tumor is confined to one wall you can readily determine between cystocele or rectocele by the introduction of the finger. In the former the finger passes behind, in the latter in front, of the protruding tumor. In this patient the finger en-

ters the vagina behind the protruding mass, and the cervix is situated just behind and at the base of the tumor. The finger can enter the vagina some distance behind the cervix. This indicates that this is not a case of true prolapsus, but one of hypertrophic elongation of the cervix, and that the elongation is at the expense of the anterior part of the cervix.

Procidentia is complete prolapsus, and this term is only applicable to those cases in which the entire uterus is outside the vulva. That in any mass the uterus is outside the vulva can be readily determined by placing the fingers of one hand in front of, and the other behind the tumor, and press them together until we find that the uterus is below. In a case of elongation of the cervix we will find a thin, attenuated cord passing upward, which is the elongated cervix. Generally in hypertrophic elongation of the cervix we find one or the other vaginal wall remaining partially or entirely undisturbed, while the protrusion involves the other. We may have complete inversion of the vagina and still find the cervix elongated.

In a diagram which I show you, you can see the protruding cervix and the inverted vagina, and a cul-de-sac formed in the bladder, and another in the rectum, and yet the fundus of the uterus is nearly in its normal situation. You can readily understand the distress and discomfort a patient must experience, with a protrusion of the vagina as it settles lower in the pelvis, from the sensation of weight and pressure. In the patient I have just shown you, we have an abrasion of the cervical mucous membrane. This abrasion extends upon the vaginal surfaces about it. In some cases there is complete destruction of the mucous membrane, leading to ulceration. Sometimes the mass itself becomes thickened and inflamed, so that its return is attended with difficulty and occasionally is impossible. A protrusion of this kind may result in secondary inflammation of the peritoneum, which causes adhesions of the prolapsed intestines, so that fixation becomes so definite and determined that it is impossible to reduce and return the uterus to its normal situation. The condition of such a patient is exceedingly uncomfortable.

Having a prolapse or procidentia, we now come to the consideration of the method of treatment. The condition was one recognized by the ancients, and is one of the earliest female diseases described. The earlier authors upon the subject were in the habit of regarding the uterus as a sentient body which could be frightened back in its normal situation by subjecting it to nauseous odors or bringing it in contact with disagreeable animals. They were in the habit of permitting toads and frogs to be placed in contact with the uterus, allowing lizards to crawl over it, subjecting it to fumigation with unpleasant odors, to drive it back to its normal place. Emmett records the fact that a gentleman from one of the Southern States was in the habit of treating such patients among colored women by placing them in a kind of sling in which the head and upper part of the body were lower than the pelvis, and she was kept in this position for three or four weeks, and her vagina filled with a decoction of white-oak bark, which produced such an astringent effect upon the mucous membrane and

walls of the vagina as to contract them and retain the organ in place. In looking over the history of the condition, we find patients were operated upon in various ways, mainly for the purpose of rendering the organ unable to escape from the vulvar orifice: thus, one introduced alternate gold and silver rings, and another did a plastic operation upon the perineum, by which the vulvar orifice was narrowed. Another placed a number of forceps on the vaginal wall, which were left in place until they sloughed, and the cicatrization following these sloughs narrowed the canal. We find a very great difference of opinion as to what supports the uterus in its normal position. One believed it to rest upon the upper part of the vagina like a cork in a bottle. Another regarded the perineum as the grand keystone of the arch; others the ligaments of the uterus as the retaining power; others the peritoneum as the structure which retained it in its normal situation. The truth lies not in any one of these, but in all of them: the maintenance of the uterus in its proper position depends upon the peritoneum, the ligaments, the proper condition of the perineum, and the relation of the vagina to the surrounding tissues. If the vaginal walls are torn during labor from their attachment to the levator-ani muscles, and have lost their muscular tissue, they gradually sag until they become heavy; and even if the uterus is retained in its normal situation by the proper muscular tone of its ligaments, we will sooner or later find an elongation of the cervix result. If the ligaments have lost their muscular tone, the uterus itself will be dragged down, and finally result in procidentia. This displacement is increased by the intra-abdominal pressure, by efforts upon the part of the individual in straining, constipation, or if she is obliged to lift heavy weights; anything which increases the intra-abdominal pressure will sooner or later promote the expulsion or displacement of the organ. With this review of the causes which conspire to maintain the uterus in its position, we come to the consideration of the treatment of displacement.

It may be divided: (1) into the restoration of the uterus to its normal place, (2) its maintenance. It is quite one thing to replace the organ, another to maintain it after it has been replaced. With the patient upon her back we grasp the uterus between the finger and thumb, and push it upward, carrying it into the vagina in the axis of the pelvic curve until it is brought to its normal situation. It may be maintained by mechanical means or surgical measures. The former comprise the various pessaries, such as recommended by Hodge (modified by various men); retroversion pessaries, the posterior bar of which passes behind the uterus into the posterior cul-de-sac of the vagina, carrying it upward; and the double-curved pessary of Gehrung; the cradle pessary of Graily Hewitt; ring, glass or rubber ball, and glass or rubber disc pessary. All have been made use of for this purpose. It is necessary that these should be of sufficient size to distend the vagina and maintain it above the vulvar orifice. The difficulty of all pessaries is that the vagina is so prolapsed and the vulvar orifice so large that the instrument, together with the uterus, is soon pushed

through. Then, again, we have various pessaries with external support—a pessary ending in a cup or ring, with rubber band attached to it, by which it is held up and which the patient wears continuously. This keeps the organ in place. But all these pessaries, whether with external or internal support, are foreign bodies and produce more or less irritation of the mucous membrane, more or less discomfort, the patient being constantly aware of their presence; so it is desirable to resort to other measures to bring about the relief of the condition and avoid the necessity of continuing mechanical means. To attain these ends, operative surgery must be evoked. The parts are restored to their normal situation, and an effort is made to bring about a normal condition. The difficulty in the various plastic operations on the vagina, whether upon the anterior or posterior or both walls, is that they narrow the vagina at its lower portion, while there is a tendency to rolling out of the uterus and constant pressure upon the newly united tissues. This keeps up until a process of ulcerative absorption results, and the organ is driven through, when the last condition becomes worse than the first. The first consideration should be to decrease the weight of the uterus. This is done by amputation of the cervix; and second, a plastic operation upon the anterior wall of the vagina. This may be adapted to a particular condition, being a denudation of a triangular, circular, or oval area, according to the amount of and the direction in which the narrowing can best be made. An operation which is frequently effective is that of Stoltz, which consists in making an oval denudation and introducing a purse-string suture, which, when tied, contracts the anterior vaginal wall in every direction. The plastic operation upon the anterior must be followed immediately, at the same sitting, by the restoration of the posterior segment of the pelvic floor. This may be done in the form of the Hegar operation, in which the triangular denudation is made high up in the posterior wall of the vagina, followed by the narrowing of the vulvar orifice, or a denudation may be made, as has been suggested by Martin; in dissecting up a column on either side of the posterior wall, the edges of each column are united by sutures, and then the vulvar orifice contracted by an operation upon the perineum. Lefort suggested an operation for prolapsus which consisted in making a vertical denudation, about three-fifths inch wide, upon each the anterior and posterior walls of the vagina, and bringing these surfaces in contact by sutures, so that the raw surfaces of the one lay directly in contact with that of the other. This was reinforced by an operation upon the perineum, narrowing the vulvar orifice, upon which this column rested. I had the good fortune to perform the first operation of this kind done in Philadelphia. It resulted in a cure of the prolapsus, which had existed for a number of years. The result of the operation is a septum, which divides the vagina into two canals, and consequently is one which is only applicable to those cases in which the probability of conception has passed. As you can readily understand, it would be exceedingly unfortunate for any individual to have such a condition complicated by a subsequent pregnancy, as the band of adhesion

would be sufficiently firm to render the delivery of the patient exceedingly difficult, if not dangerous.

If the uterus is turned backward, so that the intra-abdominal pressure is directed upon its fundus or posterior surface, constantly driving it down upon the newly-united surfaces, the treatment will be incomplete unless measures are taken to bring the uterus forward. The Alexander operation, shortening the round ligaments, will be found to serve a useful purpose, as the organ is held forward, and consequently in a position in which the tendency to displacement is greatly decreased. In the patient I have had before you this morning, a woman sixty-three years of age, in enfeebled health, in whom operation would be attended with more or less shock, possibly in whom there would be danger in the administration of an anesthetic, it becomes a question whether any other procedure of less danger would afford relief. An operation has been recently devised which consists in passing beneath the vaginal mucous membrane a number of circular sutures, preferably wire or silk-worm gut, the first passed just below the cervix, introducing the needle beneath the vaginal wall, carrying it as far as can be reached, bringing it out, reintroducing it at the point of exit, and so on until the vagina is encircled, bringing it out at the point through which it was introduced; a second suture is introduced about half to three-fourths inch below this, and so on until the last suture is passed above the vulvar orifice. These sutures are then drawn comparatively tight and fastened, pushing them back through the opening, so each is a completely buried suture. The result is a narrowed canal, through which it will be impossible for subsequent displacements to occur, and yet sufficiently large to favor drainage. Under the influence of cocaine these sutures may be introduced without the administration of a general anesthetic.

CLINICAL MEMORANDA.

TOXIC ERYTHEMA.

BY CUTHBERT R. BARHAM, M.D.,
OF PITTSBURGH, PA.;
ATTENDING PHYSICIAN TO THE SKIN DEPARTMENT OF THE PITTSBURGH FREE DISPENSARY; CONSULTING DERMATOLOGIST TO THE ROSALIA FOUNDLING AND MATERNITY HOSPITAL.

UNDER this designation I wish to call attention to a form of erythema occurring in the course of pus formation. It is most commonly encountered in young children. Its form is usually macular or punctate, though occasionally of the papular or vesicular variety, and its course mild and of short duration, accompanied by moderate rigors, with rise of temperature and subsequent desquamation. The eruption itself is of slight importance, except in those rare cases where the subjective sensations of burning and itching are distressing to the patient.

The common form of small discrete macules of faint pink color, appearing first upon the abdomen and sides of the chest, few in number and widely distributed, are seen in the milder forms of endocarditis and empyema, tubercular abscesses, etc. In some cases of abscess of

the middle ear or of mastoid this form is seen, but usually attendant upon these conditions we find the macular eruption rapidly changing to a papular, and in the severer cases to a vesicular form, with rigors of moderate severity, headache and backache at the beginning, followed by rise of temperature. These symptoms may follow an infected wound, accidental or intentional (as in vaccination), where there is rapid formation of pus and absorption of the toxic products of the same.

The following cases will illustrate a few of the features noted above:

CASE I.—Male, aged 18 months. Had suffered from empyema. Chest had been drained, child improved, and drainage tube removed, the wound being allowed to heal. Rigors and rise of temperature developed one week after the tube was removed, followed next morning by a macular erythema over a greater part of the body. The chest was again drained, the fever subsiding and erythema disappearing the next day.

CASE II.—Male, aged 6 years. Suffering from tubercular abscess of hip-joint. The abscess had been opened, but owing to carelessness of the nurse had later not received proper attention, and was partially closed. A diffuse erythema developed, which rapidly disappeared after the abscess had been thoroughly cleansed.

CASE III.—Female, age 13 years. A punctate eruption appeared twelve hours after a rather severe headache and pain in the back; temperature rose to 102° F. The rash was located on face and chest, and later extended to the abdomen and extremities, at first macular, rapidly (within twelve hours) becoming papular in character, vesicular in places. The diagnosis of measles had been made before the writer saw the case. Improvement was followed by three exacerbations in ten days, when pus discharging through the outer ear disclosed an abscess of the middle ear. Treatment was instituted for this, and resulted in the prompt healing of the abscess and the complete disappearance of the erythema in two days; desquamation slight.

Dr. G. H. Fox (MED. NEWS, January 4, 1896) reports the following case:

Male, age 2 years. Eruption appeared one week after vaccination; became generalized after twelve hours. There was considerable redness and swelling around the pustule, but no signs of injury or external irritation. Eruption began to fade on the third day.

In all except the last of these cases the absorption of some toxic product of the existing inflammation was evidently the main etiological factor, since removal of the pus resulted in the disappearance of the eruption, no local application or other treatment of the eruption having been employed. In the last case both local treatment and a laxative were employed.

Dr. Fox touches lightly upon the etiology in his report, from which I quote as follows:

"These eruptions (*seen after vaccination*) may depend upon some abnormal condition of the patient, in which case the vaccination cannot be regarded as the prime cause of the rash, inasmuch as it merely evokes an eruption which was already latent, and might have

appeared spontaneously, or from any one of a variety of causes."

This I consider a misleading use of the word *latent*, inasmuch as many diseases, eczema for instance, may be due to a variety of causes; yet it behooves the physician to seek the exciting cause in each separate case.

Again: "Frequently, however, the vaccinated subject is in normal health, and the vaccinal eruption, like a drug rash, can only be attributed to idiosyncrasy."

The symptoms noted—headache, malaise, febrile reaction, etc.—indicate that these cases should come under that class designated "erythema scarlatiniform." The phenomena are due to the action of some poison on the nervous system, frequently, as in these cases, the toxins produced at the foci of suppuration. The erythema is only a part of the general process, representing the action of these toxins on the vaso-motor centres. As in all diseases due to such causes, the intensity of the reaction depends to a certain extent upon the normal resisting power of the tissues or organs affected. To this extent we may ascribe its occurrence to idiosyncrasy. In other words, we may regard the toxin absorption as the prime or exciting cause of the rash, the lowered state of health, and consequent subnormal tone of the nervous system as secondary or contributing etiological factors.

A consideration of this class of cases and their etiology is presented, not so much on account of the skin and nervous phenomena as to call attention to a condition which may frequently lead to the diagnosis of an unsuspected pus foci.

32 WESTINGHOUSE BUILDING.

SARCOMA OF THE LARYNX—FINAL REPORT OF A CASE.

By JOHN A. THOMPSON, M.D.,
OF CINCINNATI, OHIO.

IN the MEDICAL NEWS for October 24, 1895, I reported a case of sarcoma of the larynx, operated upon by a method radically different from that usually followed in laryngectomy. In the interest of truthful medical statistics, I wish briefly to report the further history of the case. At the time the article was written the patient had resumed work and was gaining rapidly in weight and strength. A little later he had a small abscess in the neck which discharged spontaneously through the opening where the tracheotomy tube was worn. After the inflammation and thickening had subsided, no trace of any neoplasm could be found in the tissues of the neck.

Early in November a second abscess developed near the median line, and this abscess was accompanied by a very rapid growth of a sarcomatous tumor in the connective tissue of the neck. The point of origin was at the level of the upper border of the thyroid cartilage on the right side, where the original growth had protruded above the larynx. The growth of this tumor was exceedingly rapid, and attended by a great deal of pain.

As no metastatic growths could at this time be located anywhere else in the body, a second operation was done November 15th. Drs. Oliver and Castle were present and

assisted at the operation. The patient was anesthetized by chloroform inhaled from a bit of gauze held over the opening of the tracheotomy tube. This simple method was more satisfactory than any of the more complicated appliances used for this purpose. The growth removed from the neck was about three inches in length, two inches in width, and one and a half inches in thickness. As all the usual landmarks except the anterior border of the sterno-cleido-mastoid had been destroyed at the previous operation, the dissection was necessarily tedious and difficult. The growth had apparently pushed the tissues before it so that only two important structures were involved. The facial artery and descendens noni nerve had to be cut in the removal of portions of the growth. After the large mass of the tumor was removed, it was found that the chain of lymphatic glands lying beneath it had become involved. The highest gland was three-fourths of an inch in diameter. The glands immediately below it were smaller; but after following down the chain until we had reached the sterno-clavicular junction without being able to remove all of the involved structures, the operation was completed with the knowledge that secondary developments in the lungs or mediastinum would soon follow. The growth was suppurating at the time of the operation. The amount of tissue removed from the neck was so extensive that it was impossible to entirely close the wound. Skin-flaps were formed so as to close as much of the wound as possible, and the remaining portion was packed with iodoform gauze.

The patient rallied rapidly after the operation. The wound healed with very little suppuration, and the patient was able to leave the hospital on the seventeenth day.

There was again a temporary improvement in his general condition, but this was soon followed by symptoms indicative of rapid growth of sarcoma in the lung. The patient began coughing up small masses of clotted blood which would obstruct the tracheotomy tube and require its rapid removal to prevent suffocation. He broke the tube in an attempt to remove it on the street one day while within two squares of my office, and came near suffocating before he reached the office and measures of relief could be instituted. December 17th he had a hemorrhage of bright arterial blood from the lung, and ever after that time suffered greatly from dyspnea. Masses of clotted blood were continually being coughed up, requiring immediate attention to the tube to prevent strangulation. The hemorrhages recurred at intervals of a few hours, in varying severity, and were attended by ever-increasing dyspnea. Physical examination showed a large mass in the left lung, and smaller nodules scattered elsewhere throughout both lungs. The patient finally died from apnea on the morning of December 21st.

The patient had acquired the art of talking by motion of the lips and cheeks so that he could readily carry on a conversation with those associated with him.

After the closure of the wound, made at the time of the laryngectomy, there was never any difficulty in swallowing. The patient ate all the ordinary foods with as much ease as before the beginning of the malignant growth.

MEDICAL PROGRESS.

Nasal Tuberculoma.—At a meeting of the Hungarian Society of Otologists and Laryngologists, POLYAK (*Revue de Laryng., d'Otol., et de Rhinol.*, 1896, No. 4, p. 115) reported the case of a woman, 49 years old, who consulted him for an affection of the right nostril, with hemorrhage and gradual obstruction commencing six months before; later the left had become implicated.

The right nostril was completely filled by an irregular tumor, bleeding easily and resembling granulations. In the left, on the anterior part of septum, there was a tissue partly covered with dry crusts, of a dirty white color, of the size of a dollar, flattened, here and there granular, projecting but slightly, and bleeding easily. The tumor of the right nostril was immediately extirpated by means of the hot snare, and it was found that the neoplasm had its base on the right part of the septum corresponding to the lesions described on the left. Hemorrhage was slight.

The tumor consisted of fine reticular connective tissue, with fairly thick fibrous layers, and a few greatly dilated blood-vessels, but altogether it was but slightly vascular. Between the fibres there were numerous tubercles, presenting in the center traces of beginning necrosis. The cells were badly colored, and indistinct, the nuclei small, shriveled, and decomposed. The tubercles contained some very characteristic giant cells of Laughan.

The surrounding tissue was infiltrated with round and migratory cells, and a small number of tubercle bacilli were found, usually appearing in the giant cells.

This was therefore an undoubted case of tuberculosis of the nasal septum. There were no signs of tuberculosis in the lungs or elsewhere. The patient was well-nourished, without the slightest sign of cachexia, and was only troubled by this affection.

This disease presents itself in two forms: as granular ulcers, and the rare form with formation of a tumor, like the case above related. It seems that the disease attacks women especially, has a strong tendency to recurrence, but seldom leads to general tuberculosis.

In the discussion following, IRSAI pointed out the importance of not confounding tuberculosis with lupus. The bacillus is identical in both affections, but the clinical symptoms are very different. In pure tuberculoma, tuberculosis may also be found elsewhere; and although a tuberculoma may heal spontaneously, recurrences are very frequent, and therefore it is important to destroy all the morbid products, with lactic acid, after complete extirpation of the diseased parts.

KREPUSKA recalls two cases in which the nose and the ear were similarly affected at the same time. The tissue extracted from the cavity of the middle ear showed in both cases giant cells and tubercle bacilli.

V. NAVRATIL said that secondary tuberculomata are much more frequent and are often taken for syphilitic, just as tubercular ulcers of the mouth and of the pharynx are often considered syphilitic.

POLYAK concluded by saying that the facts recited show clearly the importance of a histological examination, because a simple microscopical examination of the exu-

date or of shreds is rarely sufficient, while the histological examination will determine at once if it be a neoplasm, tuberculoma, or simply a bleeding polypus. A test by bacterial cultures also might be tried, but is seldom necessary.

Albuminuria in the Sequence of Vaccination.—To determine the frequency with which vaccination is attended with the presence of albumin in the urine, PEIPER and SCHNAASE (*Berliner klinische Wochenschrift*, 1896, No. 4, p. 76) make a series of observations upon 122 infants successfully vaccinated for the first time; upon 54 children successfully revaccinated, and upon 127 military recruits. The examinations were made before the vaccination and on the first, third, seventh, and tenth days afterward. In cases in which albumin was found, subsequent examinations also were made. Of the 122 children vaccinated for the first time albuminuria was found in 7, or 5.73 per cent.; 474 examinations were made with positive results in 9, or 1.89 per cent. In none did nephritis develop. Of the 54 cases of revaccination albuminuria was found in 10, or 16.6 per cent., and among the recruits 10.63 per cent.

Ureteral Implantation into the Rectum.—KRYNSKI (*Centralblatt für Chirurgie*, 1896, No. 4, p. 73) points out that the most serious objection to implantation of the ureters into the rectum is the danger of infection of the kidneys by the contents of the bowel. To obviate this danger in cases of ectopia of the bladder, an elliptical section of the bladder-wall, including the opening of the ureters, may be removed and sutured into the wall of the rectum. If, however, the extremity of a divided ureter is to be implanted into the rectum it is recommended that upon the antero-internal aspect of the rectum, just below the sigmoid flexure, two incisions through the serous and muscular layers be made at an acute angle, the one 1 cm. long, and corresponding to the transverse axis of the bowel, the other from $2\frac{1}{2}$ to 3 cm. long and directed obliquely downward and outward. The serosa and muscularis included between these incisions is dissected away, and at some distance from the angle of the wound an opening is made through the mucosa. Into this opening is introduced the obliquely divided extremity of the ureter, and the mucous membrane of the two is sutured the one to the other. The extremity of the ureter is covered with the dissected portions of serosa and muscularis, which are sutured into their original situation. Additional sutures unite the ureter and the bowel.

The Immunizing Power of the Blood Serum of Vaccinated Heifers.—As the result of an experimental investigation into the immunity conferred by vaccination and by inoculation with the blood-serum of vaccinated heifers BÉCLERE, CHAMBON and MÉNARD (*Annales de l'Institut Pasteur*, 1896, No. 1, p. 1) have reached the following conclusions: The serum of vaccinated heifers obtained at the height of the vaccinal process, that is, from ten to fifteen days after vaccination, possesses immunizing properties against vaccinal inoculation. This action is apparent early, a subcutaneous injection of a sufficient

quantity of such serum immediately before vaccination by a number of subepidermic inoculations modifying profoundly or even aborting the subsequent vaccinal eruption. On the other hand the immunity consecutive to subcutaneous vaccination appears late, an injection beneath the skin of vaccinal lymph immediately or even a day or two or three days in advance of subepidermic inoculation with the same lymph in nowise modifying the appearance of the subsequent eruption. The rapidity of action of the serum of vaccinated heifers would seem to show that the immunizing properties are due to the presence of soluble substances rather than to that of micro-organisms. The immunity consecutive to subcutaneous inoculation with vaccine-lymph is developed slowly and gradually, not being complete before the eighth day, when it is sufficient to neutralize subepidermic inoculation with vaccine-lymph. The serum of vaccinated heifers injected beneath the skin of animals of the same species inoculated immediately afterward manifests its immunizing power in accordance with the dose injected, the minimal dose being relatively considerable. The immunity conferred by a dose of $\frac{1}{100}$ of the body-weight of an animal, inoculated immediately afterward, is incomplete but sufficient for practical purposes. The immunizing action of the serum of vaccinated heifers is apparent even when the subcutaneous injection does not proceed but follows vaccination at an interval of 24 or 48 hours. The immunizing power of the serum of vaccinated heifers does not appear to be increased by injecting for two days previously vaccinal virus beneath the skin of the animal furnishing the serum.

THERAPEUTIC NOTES.

The Treatment of Erysipelas with Applications of Vaseline.—KOSTER (*Semaine médicale*, 1896, No. 9) has made a comparative study of the results of treatment in a large number of cases of erysipelas, in which various methods were employed, including painting with tincture of iodine, spraying with mercuric chloride, and applications of ichthyl and of simple vaselin, and found that the results with the last were quite as good as those with any other measure, as regards mortality, complications, and extension. The applications of vaselin were made twice daily and covered by gauze with a certain amount of compression.

Treatment of Hiccough by Traction of the Tongue.—At a recent meeting of the Société de Biologie, LABORDE (*Compt. Rend. Hebd. d. Séances de la Soc. de Biol.*, 1896, No. 5, p. 135) read, in the name of LÉPINE, a communication detailing the history of a young girl who had suffered for four days uninterruptedly from obstinate hiccough, which resisted all ordinary treatment. It was observed that when the child upon request extruded its tongue the hiccough ceased. Acting upon this observation the tongue was firmly withdrawn from the mouth for several minutes and upon its return it was found that the hiccough had ceased. Laborde referred also to two classes of similar character previously reported by Viaud.

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SATURDAY, MARCH 28, 1896.

AMATEUR SURGERY.

At a recent meeting of the New York Academy of Medicine Dr. Robert Abbe, in discussing a paper on "Cancer of the Larynx," made use of the term "amateur surgery" in the following connection: "It is easy to remove a cancer of the tongue; it is almost impossible to prevent its recurrence. The study of the lymph channels and removal of all infected glands in a case of this character has given the subject a new impetus, and while it places a cure within the range of possibility, it at the same time removes the operation from the field of *amateur surgery*."

Although the significance of the expression would seem to be quite clear in this connection, he was taken seriously to task by a correspondent in the *Medical Record*. This criticism, however, gave Dr. Abbe the opportunity to make his meaning quite clear, and he has done so, in no uncertain way, in the last issue of the same journal.

The position is so well taken and the remarks are so timely that they are worthy of repetition: "I believe there is a considerable amount of grave surgery done to-day by practitioners whose

temerity is stimulated by inflated statistics of small mortality under modern surgical practice, and whose feeling that they would like to do serious surgery is entirely unjustified by their training. Such novices in the larger field of work are rightly called amateurs. No man of mediocre talent or training should attempt operations involving grave risk to human life and obviously beyond his depth. He should confine himself within minor surgical limits."

Such limitation does not debar the young practitioner from his proper field of experience, nor does it close one's eyes to the fact that every one must have his first case in every field of surgery upon which he may enter. But the justification for this first essay must be found in proper preliminary training and a due sense of the sacredness of human life and the responsibility of the operator.

THE OPTICAL SOCIETY BILL.

A BILL is now before the New York State Legislature, whose purpose is to incorporate the "Optical Society of the State of New York for the purpose of improving and regulating the practice of Dispensing and Refracting Opticians." There is no doubt that the practice therein specified sorely needs improving and regulating, and should be brought under careful supervision. But the provisions of this bill have evidently not been considered with the care that the importance of the subject demands. In the first place, it delegates to untrained and unskilled hands a field of work that belongs to the medical profession. Nothing in ophthalmic practice is better established than the fact that eye symptoms are simply one manifestation of remote nervous, or constitutional causes, about which "dispensing and refracting opticians" have not the slightest conception, and yet, under this bill, they may legally assume the right to adapt glasses for the relief of headache, neuralgia, chorea, epilepsy, or any other of the many ills of life.

The bill incorporates a body without naming the incorporators. They may be jewelers' clerks or tinkers, opticians, or blacksmiths; as a matter of fact, one of them is reported not to be an American citizen. Moreover, all opticians, jewelers, or clerks, that are now fitting glasses or ex-

cuting prescriptions for lenses can secure certificates by simply making application and paying five dollars. But after ninety days from the passage of the bill no optician in the State, who is not a member of this society, can execute ophthalmic prescriptions for lenses or adapt glasses for the sight.

An attempt is made in the bill to restrict membership in the society by a system of examinations. But the requirements are not mentioned nor any method outlined by which they can be determined. The apparent supervision of the Board of Regents is nugatory, for they are compelled to select three out of the six men nominated for examiners by the secretary of the society.

The medical profession of the State should certainly make a determined effort to modify or suppress this bill.

BACTERIOLOGY.

THE EXISTENCE OF SPECIFIC CURATIVE SUBSTANCES IN THE BLOOD-SERUM OF TYPHOID AND CHOLERA CONVALESCENTS.

RECENT studies, by Pfeiffer and Kolle, upon the specific immunizing substances developed in the blood, by an attack of typhoid fever or cholera, are of great interest, since they indicate that in these diseases nature limits disease not through the development of antitoxins, as in diphtheria and tetanus, but through the development of specific bactericidal substances. They found this opinion upon the results obtained from a long series of careful experiments.

Thus they found that if a moderate-sized platinum loopful of a virulent typhoid culture of twenty hours' growth is mixed with a cubic centimetre of sterile salt solution or bouillon, and injected into the peritoneal cavity of a young guinea-pig (300 grs.), the bacilli will be found to rapidly increase in numbers, and in the peritoneal cavity a bloody exudate will be thrown out if the disease is rapidly fatal, or a more purulent one if the disease is less acute.

Death takes place, according to the virulence of the culture and the number of bacteria injected, in from six hours to several days. In the more

acute cases the bacilli continue to increase in numbers until death, while in the more chronic ones, after increasing for a number of hours, they cease to develop and gradually diminish. In either case death is due, according to Pfeiffer, to the poisons produced by the breaking up of the bacterial bodies and not to poisons excreted by them while living.

If now other animals are injected with the same quantities of bacilli, to which normal human blood serum is added in small and large amounts, it will be found that those receiving the culture, with the addition of small quantities of serum, die as those receiving no serum, while those receiving large amounts of serum are protected. Normal blood serum having, as is well known, feeble bactericidal properties. Finally, instead of normal serum, much smaller amounts of serum from those recently convalescent from typhoid fever were added to the same quantities of virulent bacilli as in the former experiments and similarly injected.

The behavior of the bacteria in the peritoneal cavity was in these very interesting. Thus, if tiny quantities of the peritoneal contents were taken after the injection of the mixture of the serum of convalescent patients and typhoid bacilli, it was found that almost immediately the bacilli began to lose their motility, and within fifteen to twenty minutes many of them showed signs of beginning degeneration. The total destruction of the bacilli soon followed.

The quick death of the bacilli was also shown by making cultures every few minutes from the peritoneal contents. Thus one loop of peritoneal fluid, removed thirty minutes after the injection, contained between four and five thousand living bacilli. The same amount thirty minutes later but five hundred, and three hours later but twenty. When sufficient serum is used all the bacilli die as a rule within sixty minutes. If the animals were killed no living typhoid bacilli were found in peritoneum, blood, or organs. If the amount of serum is too small after the bacilli have diminished somewhat in number they will again increase, and this increase will continue until the death of the animal.

This serum, which possessed such marked bactericidal effect upon the typhoid bacilli when in-

jected into the peritoneal cavity with the bacilli, was found in the test tubes to possess very feeble bactericidal power, and, indeed, by heating it to 60° C., it could be robbed of its bactericidal power in the test tube completely without diminishing to any appreciable extent its power when injected into the body.

The specific nature of this substance was shown in that, while acting so powerfully on the typhoid bacilli, it was without action on other bacilli closely allied to it biologically. The serum has in the future, therefore, a probable use for diagnostic purposes. The experiments with the serum of animals, immunized to the typhoid bacilli, gave similar results to those obtained from the serum of convalescent patients. With cholera the results obtained were almost identical.

From their experiments they conclude that the serum of typhoid and cholera patients contain substances which have a bactericidal and solvent effect in the body upon the bacteria of these diseases. These substances do not exert their effect outside of the body, where they are in an inactive state.

An antitoxin is not present in the serum. Normal human serum possesses feeble general bactericidal properties, which affect typhoid and cholera as all other bacteria, and is in no way specific. The serum from typhoid and cholera convalescents is not only in its bactericidal power from twenty to one hundred times stronger than normal serum, but is also specific, typhoid serum being bactericidal only to typhoid bacilli, and cholera serum to cholera spirilla.

This specific bactericidal substance in the blood of typhoid and cholera convalescents and immunized animals, is an added argument for the specific nature of these bacilli. The bactericidal substance in the serum of animals treated by increasing doses of the living virulent typhoid bacilli or cholera spirilla has not yet been obtained in sufficient concentration to make its use in the treatment of human disease seem advisable.

The results above summarized are of great importance if true, and they seem to be founded on very careful and repeated experiments. They indicate that we can only hope to find antitoxins, such as have been discovered in diphtheria and tetanus, in a few diseases. In the majority we

must seek in other directions to find the means of prevention and cure substances. To a certain extent this is discouraging.

Their results also teach us to be cautious in using the various so-called antitoxins now put on the market for the treatment of almost all diseases due to bacteria. The majority of these substances certainly have none of the properties to which they lay claim.

WILLIAM HALLOCK PARK, M.D.

ECHOES AND NEWS.

MR. GEORGE S. DAVIS, the publisher of the *Index Medicus*, has been elected a foreign member of the Hygienic Society of Paris, in recognition of his services to medical literature.

ON March 21st, Governor Morton, of New York, signed Senator Nussbaum's bill, which raises the medical students' course from three to four years, but allows students who have entered colleges to be graduated under the rules in force when they matriculated.

THE author of the statement that "Of the 3000 physicians in New York, only 600 are native Americans," should produce substantial evidence of its truth, or else correct a palpable error that is being widely quoted.

TOOLE'S THEATRE in London is to be torn down to make room for an addition to Charing Cross Hospital.

IT is reported that Prof. W. O. Atwater, of Middletown, Conn., has recently conducted a series of valuable physiological experiments relative to the value of foods by placing his colleague, Dr. Tower, in an airtight chamber for a week at a time. It is said that thoroughly scientific methods have been employed in these investigations, and the results will therefore be regarded important.

ON the 18th instant President Cleveland placed his official signature to the finding of the court-martial sentencing Medical Inspector Edward Kershner to dismissal from the U. S. Navy for violation of naval regulations.

IT is reported from London that a bacteriologist named Czajkowski has discovered in the blood of patients suffering from measles a bacillus which is regarded as the probable cause of the disease.

THE repetitions by numerous observers of experiments, first instituted by the MEDICAL NEWS, to determine the influence, if any, exercised by the X-rays upon germ life have invariably confirmed the negative results published in the issue of February 22d last.

APROPOS of the wonderful penetrating powers of the cathode ray, a young lady, at a recent dinner party in New York, ventured the remark that she understood that these new cathartic rays could go through anything.

Two Chinese M.D.'s of New York City, Dr. Jin Fuey Moy and Dr. Lee Foy Quong, declare that Long Tong is not suffering from leprosy, and have been making an effort to have him released from the leper colony on North Brothers Island. Their opinion, however, has not been confirmed by the experts that were sent to examine him, and Long Tong will be obliged to stay where he is.

THE 5-year-old son of a doctor in Monte Vista, Col., played doctor with his 2-year-old sister one day last week. He imitated the things he had seen his father do, and took a phial from a shelf and forced his sister to swallow its contents. The bottle contained morphine and the little patient died from its effects.

ELEVEN nurses composed the class which graduated March 16th from the New York Hospital Training School.

DURING the week ending at noon March 21st there were 31 deaths due to violence reported to the Registrar of Vital Statistics for New York City. The total number of deaths from all causes for the same week was 850.

THE female doctors of Chicago have organized The Medical Woman's Club, which held its first regular meeting last week.

DR. ANTONIO LAGORIO, founder and conductor of the Chicago Pasteur Institute, has been decorated by King Humbert with the cross of Chevalier of the Order of the Crown of Italy.

THE medical examining board of Ohio recently appointed by the Governor in compliance with the requirements of the new law regulating the practice of medicine, consists of three regular, one homeopathic, two eclectic, and one physio-medic practitioners. Dr. Charles A. L. Reed, of Cincinnati, has been appointed one of the representatives of the regular school upon this Board.

THE CHICAGO ACADEMY OF MEDICINE dined at the Leland Hotel, March 13, 1896. The chief feature following was a paper by Dr. Harriet G. B. Alexander, on "Training and Environments as Corrections of Degeneracy."

AN ordinance was passed by the Chicago Municipal Board March 9th, known as the ambulance ordinance. It contains a provision that every physician having a permit and displaying a badge, to be procured from the city clerk, shall have the right of way for himself and his vehicle in the streets as against all processions, persons, vehicles, or animals, when answering professional calls.

THE southwest wing of St. Luke's Hospital, 112th Street and Cathedral Heights, called the Norrie Pavilion, in honor of Gordon Norrie, treasurer of the hospital, was opened for patients last week. The pavilion contains 150 beds, and will be devoted exclusively to the male wards. It is six stories high. It is the third of the group of six buildings which will comprise the entire institution when completed.

MR. EDISON reports his discovery that crystals of calcium tungstate, spread upon white paper, fluoresce in the X-rays six times as strongly as do the films made with platinum barium cyanide first suggested for this purpose. He has been able to see moving objects through eight inches of wood. Mr. Edison further states that this fluorescence is also obtained with thin plates of mineral fluorite (a combination of fluorene and calcium), and after a short exposure to sufficiently powerful rays the plate retains the fluorescent picture for sometime.

SKIAGRAPHY continues to extend its practical application in surgery. On March 16th a piece of glass was located in a patient's hand in Waterbury, Conn., and successfully removed; two pieces of glass have been accurately located and later removed by incision from Sandow's right foot; on the 21st, a gunner, who was wounded while firing a salute on Washington's birthday, at West Point, and was still suffering so great pain in his arm and wrist that it was feared by the surgeons that amputation would be required on account of probable crushing of the bones, was gratified to learn that the skiagraph showed his bones intact. We would suggest that the X-ray be turned on Edward Krager, of West Orange, N. J., who swallowed his rubber plate of eight false teeth on the 18th instant. The teeth have not yet been located.

THE members of the Long Beach Life Saving Station are suffering with what was pronounced by many of the old seamen to be ship's fever, said to have been contracted from the crew of the schooner Mary E. Walker, which went ashore on Long Beach about ten days ago. The disease has spread among the people at East Rockaway, L. I., and adjacent villages. All fears have been allayed by the quarantine officer, who pronounced the disease an aggravated form of itch.

MEN of great longevity in the medical profession are pronouncedly in evidence of late. First Pennsylvania presented her oldest practitioner, Missouri followed, and then California. Now Michigan claims the oldest practicing physician in the person of Dr. William Sprague, of Coldwater. He is 99 years old, and has practiced in that town more than fifty years. But news comes from Glamorgan, Wales, that Dr. William Salmon, of that place, entered on his one hundred and seventh year Monday last. He is still in excellent health, though he has not driven out of doors since his hundredth year, and stopped smoking as a regular thing when he was 90, though now and then he has a cigarette and drinks port more freely than he used to do. He derives deep pleasure from the faith that he is the oldest Justice of the Peace, the oldest physician, and the oldest Freemason in the world, and Gladstone, who is young enough to be his son, sends him a birthday telegram each year, with sincere wishes for here and hereafter.

WHILE New York City may point with pride to her almost unparalleled hospitals, the magnificent appointments and facilities of which have not only aided the indigent sick but have attracted the wealthy as well, it is a

notable fact that no provision beyond the wards of the pest-house has been made for those so unfortunate as to contract certain contagious diseases. The evident demands of the situation have recently attracted the attention of the charitable ladies of the city, prominent among whom should be mentioned Mrs. John W. Minturn. One hundred thousand dollars was considered to be necessary for the proposed hospital, and Mrs. Minturn, herself giving twenty-five thousand, has been able to get nearly the requisite sum. Twenty thousand dollars is still needed for furnishing the hospital throughout, and it is hoped that donations for this purpose will come. It is hoped that a few of the rooms may be endowed, so that they may be occupied free of charge by those whose means would be overtaxed by the regular payment, and whom it would be absolutely cruel to send to the public wards of the Willard Parker. To endow a room requires \$6000. The site selected for the building is on the public land on Sixteenth street, near Avenue C, which has every advantage of isolation, and, fronting on the broad East River, receives pure fresh air from the water. Not only will it be as germproof and fireproof as modern science can make it, but every precaution for preserving the health of the servants, officers, and those in any way connected with it will be taken.

FOR several weeks, what would have been an amusing controversy had it not seriously involved the welfare of members of the most unfortunate class of humanity—the mentally diseased—has been in daily evidence between the New York State Commission in Lunacy and the Commissioners of Charities of New York City. A provision for the admission of any patient to the State hospitals is that he shall be dressed in a new suit of clothes; and a failure on the part of the City Charities to provide this for those patients transferred from Bellevue has been met by a refusal to receive them on Ward's Island. After resorts to various strategies by both parties, during which, in one instance, a lunatic was allowed to escape, a truce has now been effected, pending the decision of the State courts.

DR. JOSE MANUEL DELGADO, a citizen of the United States residing in Cuba, has been severely wounded by the Spanish troops under General Melquiz. Although he protested that both he and his father were American citizens, the employees on the Delgado plantation to the number of eight were killed, and Dr. Delgado was bound, shot, and left by the Spaniards for dead. The matter has been placed in the hands of the U. S. Consul-general at Havana, to which place Dr. Delgado has been transported upon a stretcher.

CORRESPONDENCE.

THE TOXIC PROPERTIES OF PIPERAZINE.

To the Editor of THE MEDICAL NEWS:

Concerning the Clinical Memorandum "Toxic Symptoms Produced by Piperazine," in the current number of THE MEDICAL NEWS, it may be of interest to your readers to call attention to the fact that in the *Therapeutic Gazette* for January, 1893, and February, 1894, in a study of the effects of piperazine on the urine, I speak of cer-

tain untoward effects observed by myself in using large doses of the drug. In one case, to ascertain the limit of tolerance and the effects of very large doses on certain of the urinary ingredients, I gave to a woman of 150 pounds, on thirteen consecutive days, 670 grains. This dosage was given as follows: In one period of four consecutive days 70 grains were given daily in three doses. This had been preceded by 20 grains the first day, 40 grains the second, and 60 grains the third, each in three doses. The 70-grain doses were followed by 25 grains daily for two days, and these in turn again by 70 grains daily for three more days. In this case scarcely any untoward effects occurred at this time; but with a different make of piperazine untoward effects of decided nature occurred the day succeeding the one on which three doses of 23 grains each (approximately 70 grains in all) were given. This maximum dose of the new preparation had been preceded by the use of 25 grains daily for a few days.

In a second case, an adult male, weight 130 pounds, in more feeble health, toxic symptoms succeeded 70 grains daily for two days, preceded by 30 grains in three doses the first day. The toxic symptoms were of the nature of nervousness and dread, succeeded by hallucinations, coarse tremors, and these by muscular weakness in-co-ordination and intermittent clonic spasm. In one of these cases a stupid condition occurred, of several days' duration. In the other an attack of acute mania, lasting several days, followed the other symptoms mentioned.

I have used piperazine a great deal—perhaps more than any one in this country—and have never observed toxic symptoms of any sort from a moderate dose, as of a half-drachm daily, although the drug has been continued for long periods of time. The limit of tolerance seems to be about a drachm daily. I have never had untoward effects to occur from a single dose of 20 grains, although I have not infrequently administered it, not, however, as an initial dose. I found, in my experiments, that the two different makes of basic piperazine on the market (neither of which, by the way, is Merck's) differed from each other quite markedly in degree of toxicity. Both makes were used in my cases. This difference was ascertained to be due to a matter of concentration of the drug in the more toxic, *i.e.*, to a much smaller amount of water of crystallization. It is on account of this that a stable salt of piperazine is preferable for administration to the basic piperazine still so much used.

Very truly yours,

D. D. STEWART, M.D.

108 SOUTH 17TH STREET, PHILADELPHIA.

March 17, 1896.

GONORRHœA OF THE RECTUM.

To the Editor of THE MEDICAL NEWS.

DEAR SIR: In your issue of March 7th I notice a very interesting clinical report by Dr. J. A. Murray, of Clearfield, Pa., on rectal gonorrhœa. On the same subject in the Feb. 20th number of the *Deutsche med. Wochenschrift* is an article by Dr. Theodore Barr, assistant on the Dermatological Division of the City Hospital at Frankfort-on-Main. He gives some startling figures as

to the frequency of the disease when carefully sought for. He says that from June 15, 1895, to Jan. 1, 1896, of 191 female patients with gonorrhœa, 67, or 35.1 per cent., of all the cases had also gonorrhœa of the rectum, as was established by microscopical examination. He thinks that the supposed rarity of the disease is owing to the fact that few cases give rise to symptoms pointing to the rectum. Few have bloody or purulent discharge from the rectum, and few have pain or tenesmus. Where these symptoms are present he thinks them due to excretions and ulcerations at the anus.

His conclusions as to the causation are also interesting, in view of the case reported by Dr. Murray. Dr. Barr thinks that the cause is almost always found in a cervical or vaginal gonorrhœa, the secretions from which are carried into the rectum by the syringe nozzle, the thermometer, or other manipulation about the anus by patients of not too cleanly habits. One of his cases developed a periproctitis as a complication, which afterward formed a fistula, in the discharge of which the gonococci were demonstrated. My attention was called to this by the two articles happening to arrive on the same day; and also by the strikingly different conclusions as to the frequency of this disease.

Yours respectfully,
WALLACE JOHNSON.

WASHINGTON, D. C.,
March 9, 1896.

SOCIETY PROCEEDINGS.

NEW YORK ACADEMY OF MEDICINE.

General Meeting, March 5, 1896.

JOSEPH D. BRYANT, M.D., PRESIDENT.

PNEUMONIA AS A COMPLICATION OF DIPHTHERIA IN CHILDREN.

DR. HENRY W. BERG read a paper with this title. He said that the very large number of deaths from pneumonia complicating diphtheria, in the Willard Parker Hospital, had detracted from the brilliant results of the anti-toxin treatment. The records of this hospital seemed to show that the antitoxin treatment had enabled even severe cases of diphtheria to survive for a longer time than formerly after the development of a pneumonia. This grave complication was liable to appear at any time while the Loeffler bacilli were still present in the throat. The pneumonia was either the result of a direct extension of the disease by continuity into the lung, or was due to mixed infection. In the latter variety, the streptococcus played a prominent part. While broncho-pneumonia was by far the most frequent form of lung complication in cases of diphtheria, there might be a lobar pneumonia, or a gangrene of the lung, or simply a pulmonary congestion. Gangrene of the lung was apt to result from the formation of the large pulmonary infarctions seen in connection with diphtheria. As regards the symptomatology, it should be recalled that diphtheria of the larynx often runs its course without marked fever, and hence that a sudden and decided pyrexia was probably indicative of a complicating pneumonia. If, in addition to this, the res-

pirations became very rapid, and there were fine crepitant râles to be heard on deep inspiration, or when the child cried, it might be confidently assumed that pneumonia was present. The sudden fever and rapid respiration alone would furnish a good reason for making a diagnosis of pneumonia, even before the physical signs of pneumonic consolidation were distinct. This was an important point, for when there is disseminated pneumonia, or the pneumonic process starts in the deep portions of the lung, the physical signs are often at first uncertain. By frequent and careful physical examinations one could usually determine if the pneumonia were due to direct extension of the diphtheritic process—a matter of no small importance in prognosis, for this variety of pneumonia was of very grave import. The prognosis rested chiefly on three factors, viz.: (1) The virulence of the diphtheria; (2) the stage of the disease; and (3) whether or not it was an operative case.

Regarding the matter of treatment, the reader of the paper said that he felt convinced that cases of diphtheria complicated by pneumonia should be separated from other cases of diphtheria; indeed, he believed that it was better to isolate all cases of pneumonia. The sick room should be kept at a temperature of not over 70° F., and should be well ventilated. Cases of intubation and tracheotomy should be most carefully guarded from contact with cases suffering from broncho-pneumonia. Antiseptic inhalations were useless; antipyretic drugs should be avoided, and instead the cold pack should be employed. This not only reduced the fever, but stimulated the patient. In the early stages, where antipyretic treatment was indicated, he favored the frequent application of ice-cold compresses to the chest. The use of diphtheria antitoxin in extra large doses was to be recommended in broncho-pneumonia complicating diphtheria. If the new anti-streptococcus serum proved equal to the claims made for it, we would have in this new agent a remedy which would be chiefly used to prevent such complications of diphtheria as broncho-pneumonia, while the diphtheria antitoxin would be employed to combat the toxins of diphtheria. The Board of Health of New York city is now working in this new field, and it was expected that before long some of this new anti-streptococcus serum would be at the disposal of clinicians.

DR. H. M. BIGGS said that it was now pretty generally known that with the exception of lobar pneumonia, which might be due to Fraenkel's pneumococcus, the other varieties of pneumonia were not specific infections, but resulted from the action of a variety of micro-organisms. In his opinion, the frequency of pneumonia as a complication of diphtheria was to be explained by the fact that the lowered powers of resistance of the human organism due to the diphtheria made the individual an easy prey to germ infection. It was because of the depressing effect of "hospitalism" that pneumonia was a more frequent complication of diphtheria in hospitals than in private practice. In hospital practice, he considered it advisable, though by no means essential, to isolate cases of pneumonia. He heartily agreed with the author of the paper regarding the inutility of antiseptic inhalations, particu-

larly the use of steam. This method of treatment could hardly fail to be very depressing to the patient. He favored cold as the best general antipyretic treatment, and considered that there was no contra-indication to its use except collapse. Even in cases of acute nephritis he had seen it used with benefit. Poultices he looked upon as an abomination, except in rare instances to relieve the pain of a dry pleurisy. Ice-poultices were much better.

DR. W. H. PARK said that while it might be more prudent to isolate cases of pneumonia, he had not yet become convinced that pneumonia developed in the hospital by infection of one patient by another; certain it was that repeated attempts had failed to obtain cultures of streptococci from different parts of the wards. He believed that in many instances the pneumonia, which was due to the streptococci or pneumococci, was the more important disease, and the diphtheria the complication. It has been the custom at the Willard Parker Hospital for the past two years to maintain the wards at a temperature of at least 80° F., the idea of the one who advocated it being, I believe, that as diphtheria was less prevalent in the summer, it was probably better to keep the wards at a summer temperature. A two-years' trial has proved this temperature to be detrimental, especially in laryngeal diphtheria. During the past eight weeks the effect of keeping the wards cooler, at 70° F., had been tried, and it had been already observed that there was an apparent diminution in the number of cases of pneumonia, and a lessened mortality among the young children. The former high temperature of the wards had acted unfavorably, in an indirect manner, by preventing proper ventilation. It was difficult to understand how the frequent occurrence of pneumonia during the past year in the cases of diphtheria treated in the Willard Parker Hospital could be attributed to sepsis, produced, as Dr. Winters, one of the visiting physicians of the hospital, claimed it was, by the use of diphtheria antitoxin, because the antitoxin serum is perfectly sterile. The only way in which it could be conceived to aid in the production of pneumonia was by lowering the vital resistance of the individual. As a matter of fact the proportion of cases which developed pneumonia, under the use of antitoxin, had been less than in the pre-antitoxin period. The actual number of cases had been larger because so many more had remained alive.

DR. J. W. BRANNAN said that during the past year at the hospital the frequency of broncho-pneumonia in the cases of diphtheria had attracted the attention of the attending physicians. After a careful study of the subject, he had come to the conclusion that the reason so many pneumonias had been observed was that this complication of diphtheria had developed in the cases which had been saved by antitoxin. In the preceding year, sepsis had been responsible for about 30 per cent., and laryngeal stenosis for 30 per cent., but in the year just past sepsis and laryngeal stenosis together had only caused about 25 per cent. of the mortality, from which it appeared that broncho-pneumonia had been the cause of death in a large number of cases that before the use of antitoxin would have died of sepsis and laryngeal stenosis.

Three important therapeutic measures had been recently introduced at the hospital, viz.: (1) A much larger air-space had been provided for each patient; (2) the temperature of the wards had been kept down to 70° F.; and (3) elevating the foot of the bed ten inches, in order to prevent the drainage of infecting fluids from the throat into the lower air-passages. This latter plan had been adopted at the suggestion of Dr. W. W. Seymour, of Troy.

DR. W. P. NORTHRUP said that in order to determine the liability of producing *schluck pneumoniae* from feeding children wearing the present form of intubation tube, Dr. O'Dwyer had caused children, who were already hopelessly ill, to drink a mixture of lampblack and milk. At the autopsies on these children it had been found that in not a single instance had either the pigment or the particles of milk passed lower down than the inferior extremity of the intubation tube. He was positive that in children under 2 years of age, although the pneumonia might at times be lobar in its distribution, it was in all cases, anatomically speaking, a broncho-pneumonia. By this he meant that in these very young children with pneumonia, a very considerable part of the lesion was to be found in the bronchi. Theoretically, Dr. Seymour's suggestion about securing drainage away from the lungs was a good one, but in practice it was difficult to keep the children in proper position. Although so much had been said at this time condemnatory of the poultice, he had not felt that he could entirely dispense with it. It was the continued poulticing, and not its occasional use, that seemed to him objectionable.

DR. WILLIAM WATKINS SEYMOUR, of Troy, said that before putting into practice the method of drainage by gravity, to which allusion had been made by the preceding speakers, he had found pneumonia a frequent complication after intubation and tracheotomy. He had been surprised to see how much better his results had been since he had adopted this plan of raising the foot of the bed 16 inches. Eight out of the last ten cases intubated by him had recovered. In all these, the hot jacket or poultice had been used.

DR. ANDREW H. SMITH called attention to the fact that in nearly all cases of broncho-pneumonia death results from exhaustion of the right ventricle of the heart, due to the great obstruction in the pulmonary circulation. As poorly aerated blood circulated through the lungs with much more difficulty than normal blood, it was not only important that thorough ventilation of the sickroom should be secured, but also that the patient be allowed to inhale oxygen. He had seen some very remarkable results from the early and persistent use of oxygen inhalations in this class of cases. The heart could be still further relieved by using nitroglycerin or the nitrites to dilate the blood-vessels. He was thoroughly convinced that the too common practice of using digitalis, in these cases, where the peripheral circulation was already obstructed, had been responsible for a frightful loss of life.

DR. ACHILLES ROSE thought that the same effect on the circulation that resulted from inhalations of oxygen could be still better attained by giving enemas of car-

bonic-acid gas, which would cause an increased interchange of oxygen in the alveoli of the lungs. This treatment by the rectal introduction of carbonic-acid gas possessed, in his opinion, much merit, although it had been hastily abandoned by most physicians because it had fallen short of the extravagant claims made for it by Bergeon and others in the cure of consumption.

**CIRCULAR OF INFORMATION REGARDING
THE DANGER OF CASES OF DIPHTHERIA COMMUNICATING THE
DISEASE TO OTHERS AFTER CONVALESCENCE.**

Bulletin of the New York Board of Health.

DIPHTHERIA is due to a germ known as the diphtheria bacillus. This germ is present in the membrane and in the secretions of the mouth, nose, and throat of cases of diphtheria. The disease is only produced by the reception of these germs into the mouth or air-passages of other persons. The discharges from the nose and throat of cases of diphtheria containing these germs may be received on handkerchiefs, towels, bedclothing, carpets, rugs, personal clothing, toys, books, etc., dry, become pulverized, and breathed in as dust, or they may be transmitted directly from the sick to the well through personal contact, as in the use of drinking-cups or eating-utensils which have been employed by the sick, or through kissing the sick, or through the direct discharge of the secretions on the hands or face or clothing of the nurse or physician or attendant in making applications to the nose or throat of the sick person. Thus, in numerous ways the germs find their way from the throat of the sick to the mouth or air-passages of the well; and if then the conditions are favorable for the development of diphtheria in the throat of the person receiving them, after a varying period the disease is produced. Diphtheria only follows the reception of the germs in the throat if favorable conditions for their growth exist there. In many cases the germs remain for many days and increase in number in the throats of healthy persons who have been in contact with cases of diphtheria, without producing the disease. Well persons who have these germs in their throat may convey them to others who contract the disease, while they themselves escape.

During convalescence from diphtheria the germs of this disease often persist in the throat for many days after all signs of disease in the throat have disappeared, and after the individual is entirely well. Investigations show that in about thirty per cent. of cases they persist for three weeks or longer after the beginning of the disease; in fifteen per cent. for four weeks or longer; in five per cent. for five weeks, and occasionally even for a much longer time. Experiments have shown that almost invariably these germs are virulent and capable of inducing the disease in others, so long as they persist in the throat, and persons having such germs in their throats may convey the disease to well persons at any time. Observation, however, has proved that the chances of communication

of the disease to well persons after complete convalescence are not great, excepting among children, who are far more susceptible to the disease and who are much more likely to become infected through the frequent introduction of articles into the mouth. The danger of communicating the disease to others after recovery is less than during the disease, because the number of germs is smaller, and because the secretions are less abundant and not likely to be discharged so that they would be received by other persons. Where persons do not remain completely isolated, as they are strongly advised to do, until cultures made from the throat show the absence of the diphtheria bacilli, they should constantly remember the facts set forth in this circular and use every precaution to prevent the communication of the disease to other persons, and should be particularly careful in their relation and contact with children.

Under no conditions will children whose throat secretions still show the presence of diphtheria bacilli be allowed to attend school of any kind, and under no conditions will adults be allowed to return to their occupation where this involves immediate contact with children.

(Signed) **GEORGE B. FOWLER, M.D.,**
Commissioner of Health.

By order of the Board of Health,
CHARLES G. WILSON,
EMMONS CLARK, President.
Secretary.

**REGULATIONS REGARDING THE ISOLATION
OF CASES OF DIPHTHERIA IN
PRIVATE HOUSES.**

Bulletin of the New York Board of Health.

IN private houses the duration of isolation of cases of diphtheria after apparent complete convalescence of such cases shall be determined by the physician in attendance, with the following conditions:

First. Children convalescent from diphtheria shall not be allowed under any conditions to attend any kind of school—*i.e.*, day-school, Sunday-school, dancing-school, etc.—until cultures show the absence of diphtheria bacilli in the throat.

Second. Circulars of information regarding the persistence of virulent diphtheria bacilli in the throats of convalescent cases of diphtheria and the dangers from infection arising from such cases shall be furnished by the Health Department and presented by the attending physician (if the patient is a child) to the mother, father, or guardian, or, if the patient is an adult, to the patient; and the meaning of the circular and the significance of its contents explained to them.

Third. The attending physician, when continued isolation is not maintained, shall immediately notify, in writing, the Chief Inspector of Contagious Diseases, of the Health Department, of his action, and disinfection of the premises may then be performed by the Health Department.

Exceptions to this rule regarding the time of isolation of convalescent cases of diphtheria in private houses shall be:

- (1) Teachers of all kinds.

(2) Persons whose occupations bring them into immediate contact with children.

The regulations of the Health Department regarding isolation of cases of diphtheria in boarding-houses, apartment-houses, hotels, and tenement-houses heretofore observed shall be continued.

(Signed) GEORGE B. FOWLER, M.D.,
Commissioner of Health.

By order of the Board of Health,

CHARLES G. WILSON,
President.

EMMONS CLARK,
Secretary.

REVIEWS.

THE PATHOLOGY AND TREATMENT OF VENEREAL DISEASES. By ROBERT W. TAYLOR, M.D., Clinical Professor of Venereal Diseases at the College of Physicians and Surgeons (Columbia College), New York; Surgeon to Bellevue Hospital, and Consulting Surgeon to City (Charity) Hospital, New York. First Edition. Lea Brothers & Co., Philadelphia, 1895. One octavo volume, pp. 1002, with 230 illustrations and 7 colored plates.

It is with interest and profit that one reads Professor Taylor's exhaustive treatise on Venereal Diseases, with their complications and sequelæ. The vast amount of research which the work contains, together with the results of the author's large and carefully observed personal experience, extending as it does over a period of many years, impresses one throughout the book, as does also the broad and unprejudiced manner in which Dr. Taylor presents and reviews the many theories that have been advanced regarding the etiology, pathology, and treatment of these diseases, and the scientific and conservative conclusions which he draws. The volume, which consists of over one thousand pages, is profusely illustrated with new and clearly executed cuts and colored plates, and is divided into an Introduction and three parts.

The Introduction is devoted to the history of the three venereal diseases—gonorrhœa, syphilis, and chancre—and shows in a clear and concise manner the etiological differences between them, at the same time reviewing the many controversies between the unicists and dualists.

The First Part, which consists of over four hundred pages, is devoted to gonorrhœa and its complications and sequelæ in the male and female, and begins with an interesting chapter on the anatomy and physiology of the penis, the urethra, the bladder, the prostate, and accessory parts.

Although the author believes that the gonococcus Neisser is the etiological factor in a large majority of cases of gonorrhœa, yet he demonstrates in a very conclusive manner that the disease may be, and sometimes is, caused by other pyogenic microbes, "the staphylococcus and the streptococcus, and perhaps others whose virulence is not yet demonstrated."

The pathology and treatment of gonorrhœa, both acute and chronic, and of stricture of the urethra, are presented in entirely new and scientific light; the author

drawing his conclusions from pathological research, combined with a vast and lengthy clinical experience.

In considering the treatment of stricture, the author protests against the reckless and indiscriminate performance of internal urethrotomy for every form and variety of contraction in the penile urethra, and shows conclusively, both from an anatomical and clinical standpoint, how normal and physiological contractions are diagnosed as strictures of large calibre, and thereupon ruthlessly cut. He clearly demonstrates, by the recital of personal cases, how soft and semifibrous strictures can be cured by careful and gradual dilatation, the infiltrating cells which constitute the stricture being absorbed through the pressure and stimulation which the sound exerts, on the stenosed and thickened urethral walls. For fibrous and inodular stricture, the author advises conservative cutting, always bearing in mind the fact that the so-called calibre of the urethra is not uniform, but varies in different individuals, and in different parts of its length.

The various operations for the relief of stricture of the urethra, together with the preparation of the patient for operation, and the subsequent treatment, are most exhaustive and complete in every detail; the division of the perineal operations for bladder drainage and deep stricture clears up a part of genito-urinary surgery where there has been much confusion in nomenclature regarding these different operative procedures.

The chapters on cancer of the penis, varicocele, hydrocele, and hematocoele give the reader a vast amount of valuable material in a very compact space; which may also be said of the manner in which the operations for these conditions are described.

The Second Part is given up to an exhaustive study of the chancre, or soft chancre, and its complicating lymphangitis and adenitis. In this part Dr. Taylor modestly refers to the important clinical fact, discovered and announced in 1876 by Dr. Bumstead and himself, although independently of each other, that the chancre has no specific virus of its own, and may, under certain circumstances, originate *de novo*.

The Third Part of the work, which is devoted exclusively to the consideration of syphilis, gives, besides the author's well-known views, everything of value that has been written on this subject up to the present time, and is therefore a storehouse of knowledge to all those interested in this disease. The nature, pathology, evolution, and course of syphilis, showing, as it does, in its early stages certain points of resemblance to the exanthemata and to diphtheria, is discussed at length and brought out in a strikingly new and interesting manner. The pathology of the chancre is most thoroughly described; the text being elucidated by numerous microscopic drawings of the initial lesion and its surrounding tissues, which clearly show the coat-sleeve arrangement of the infiltrating cells around the blood-vessels, not only those set in the chancre, but also some distance from it. From a careful study of the text and its accompanying plates, the utter futility of aborting syphilis by the excision of its initial lesion will be seen. The early and late syphilitides, together with the affections of the hair, nails, and mucous

membranes, are most beautifully illustrated by half-tones and colored plates taken from the author's cases, and therefore give the reader accurate and lifelike pictures of these various affections, which are minutely described in the accompanying text.

The treatment of syphilis, beginning as it does with the abortive treatment of the disease, by the excision of its initial lesion, is the most complete and at the same time concise essay that it has been the writer's good fortune to read. The various methods and the different drugs and preparations recommended are given in detail, and their merits or demerits honestly stated; after which, the author lays down a broad line of treatment, that it will well behoove workers in this field to carefully study and follow; this treatment is ably described, is not confined to the routine use of one preparation and one mode of administration, but includes many preparations of mercury, given by the stomach, hypodermic injection, inunction, or fumigation, according to the condition of the patient and the variety of lesion that he or she may present.

When one who is familiar with the literature of these disease has carefully read and considered Dr. Taylor's work, he will lay aside the volume with the firm conviction that he has read the clearest, most unbiased, and ably presented treatise as yet published on this vast subject.

Messrs. Lea Brothers & Co., the publishers, are to be congratulated upon the general appearance of the work, which is most excellent in all respects, but especially upon the illustrations and colored plates, which show a decided superiority over those usually observed in other works devoted to this subject.

A TREATISE ON NERVOUS AND MENTAL DISEASES.

By LANDON CARTER GRAY, M.D., Professor of Diseases of the Mind and Nervous System in the New York Polyclinic. New (2d) edition. In one very handsome octavo volume of 728 pages, with 172 engravings and three colored plates. Cloth, \$4.75; leather, \$5.75. Philadelphia: Lea Brothers & Co., publishers, 1895.

The first edition of this treatise was fully noticed in the NEWS. The fact that it has gone to a second edition in two years shows that its merits have been fully appreciated by the profession at large. The present edition has undergone a real revision, the result of which has been to greatly increase the value of the work. Additional chapters, describing different forms of insanity, have been added; the anatomical introduction has been remodelled, and the index, which in the first edition was defective, has been made all that could be desired. Some new and beautiful plates have been added, and the illustrations in the first edition have in many cases been re-executed. Cortical histology and histo-pathology, as illustrated by the work of Golgi, Cajal, and Andriesen, have received due consideration, both in the introduction and under the pathology of some of the organic forms of brain disease. The bibliography has been omitted in order to make room for what the author regards as more important new matter. The recognition by the author of the position and import-

ance of syringomyelia is in contrast with the views expressed by him in the first edition. It is not necessary to again review in detail this work. The first edition has met with deserved success, and the present shows many improvements, both in positive additions in the text and illustrations of material of great value, and in the correction of the defects and shortcomings of the previous edition. The treatise will continue for many years to be a welcome book to the student and general practitioner. The paper and printing are of the very best quality.

AN ELEMENTARY COURSE IN EXPERIMENTAL AND ANALYTICAL CHEMISTRY. By JOHN H. LONG, M.S., Sc.D., Professor of Chemistry and Director of the Chemical Laboratories in the Schools of Medicine and Pharmacy in the Northwestern University. Small 8vo. 497 pages and Index. Chicago: E. H. Colegrove & Co.

WE are pleased to recognize in this manual another evidence of the tendency to abandon the use of a course in qualitative analysis for practical instruction for beginners in chemistry. Dr. Long rightly observes that the system gives a distorted view of the relative importance of that department of chemistry. The complex problems set for the student in the usual qualitative course are not representative of the actual work either of research or commercial analysis. The classification by means of the so-called "group-reagents" is not a scientific one, but a purely arbitrary arrangement for a narrow practical purpose.

In the present work Dr. Long devotes over 250 pages to the experimental part; that is, detailed directions for performing 226 experiments, exhibiting the properties of elements and important compounds, and the general principles of chemistry. There are but twenty-two illustrations in this part, and most of these are not particularly commendable. We think it would be wise to illustrate such works quite freely, selecting the simplest apparatus, and to give a preliminary chapter of some length on the forms and uses of the standard articles, test-tubes, dishes, etc.

In the section on qualitative analysis the usual group-reagents are used. There are also chapters on spectroscopy, toxicology, and volumetric analysis. The decimal system of weights and measures is employed. The work is well printed.

CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY, FROM FEBRUARY 7, 1896, TO FEBRUARY 22, 1896.

February 11.—STEELE, J. M., Surgeon, detached from the "Independence" and ordered to the "Monadnock."

February 19.—WALES, P. S., Medical Director, placed on retired list from February 27th.

GUITERAS, D. M., Surgeon, detached from the "Montgomery" and granted six months' sick leave.

CURTIS, L. W., Passed Assistant Surgeon, detached from duty at Indian Head Proving Ground and ordered to the "Montgomery."

MORRIS, L., Assistant Surgeon, detached from the naval hospital at Philadelphia and ordered to the Indian Head Proving Ground.

February 21.—DICKINSON, DWIGHT, Medical Inspector, ordered as member of the Retiring Board, February 28th.